May 1950

25c

# Organic Gardening

Gardening without Commercial Fertilizers

PURDUE UNIVERSITY
MAY 20 1950
LIBRARY

***Read these 3 Basic Books by J. I. RODALE***

# PAY DIRT

HERE is *the best guide to the organic movement.* The "bible" of thousands of gardeners, PAY DIRT points the way to proper farming and gardening methods, shows how the individual gardener can obtain bigger yields of disease-free plants, rich in health-giving qualities. Now in its ninth edition, PAY DIRT is still one of the most important books published in this country in years.

Next to the Atom Bomb, nothing else in the world is so serious as Man's ravishment of the earth that sustains him and keeps him from starvation. Even more than atomic energy, our topsoil could become beneficial to mankind if properly treated. PAY DIRT points the way to proper farming and gardening methods and is guaranteed to "give a case of the jitters to all back yard gardeners as well as . . . farmers who have been playing it the easy way by using chemical fertilizers. It will very well send them back to the compost heap."—*The New Yorker.* "Brings the all-important world problem of soil conservation into focus for the individual gardener."—*N. Y. Herald Tribune.* "An exciting book, both for the farmer and the gardener."—Richardson Wright, in *House and Garden.*

PAY DIRT is a natural for everyone who wants to adopt organiculture. Cloth, 252 pp. **$3.00**

## THE HEALTHY HUNZAS

A BOOK about the inhabitants of the northwestern section of India who are astoundingly healthy because of the way they raise their food. A race of over 22,000 people, the Hunzas possess a bodily buoyancy that makes them unique among the world's national groups. Full details show how any gardener or farmer can apply the Hunza methods. Cloth, 263 pp., 20 full-page illustrations. **$3.00**

## STONE MULCHING IN THE GARDEN

A NEW INVENTION in gardening! An authoritative guide to the use of stones and rocks for obtaining greater yields and healthier plants. This sensational but natural practice obviates digging, cultivating, hoeing, and weeding. Here is the most remarkable and promising cultural practice proposed in recent years. Cloth, 164 pp., 50 photos. **$3.00**

***Order books on this page from***
**ORGANIC GARDENING**
**Dept. 5-G, Emmaus, Pa.**

***The amazing story of an organic farm***

# HUMUS and the FARMER

## *by FRIEND SYKES*

TELLS how 750 "worthless acres" were changed into rich farm land by use of the organic method. Filled with graphic descriptions, illustrations, recommendations for making pastures, reclamation of waste or derelict lands, and increasing the water-holding capacity and productivity of the soil. The value of mixed farming and reforestation, the importance of the earthworm, and the mechanization of the compost method are all clearly explained.

Friend Sykes' account begins when what was regarded as one of the best herds in England proved, upon government inspection, to be 66% diseased—the result of deficiencies in the food plants. The herd was dispersed and the valuable farm land sold. Friend Sykes then purchased 750 acres of land on the Salisbury Plain which farmers round about considered practically worthless. He subsoiled it and fertilized with natural manures exclusively. Pasture and crop plants were grown which were rich in minerals and other nutrient materials.

As a result, the cattle and horses were maintained in health and vigor that had been hitherto unknown, and the land is now visited by outstanding agriculturists as one of the most interesting farms in England. 416 pages, 40 photos. **$4.50**

# The Story of that

# *Amazing GRO-MULCH*

•

There is a new product that is being processed in the southern part of Louisiana. It is called GRO-MULCH and is creating a sensation among horticulturists in that area. Roses, Azaleas, Camellias, Day-Lilies, Iris, Annuals, Potted Plants, as well as vegetables,—all seem to thrive in this material. We have testimonials ranging from—"Ivy that grew 21" in 21 days" to "Freshly set out two year old rose bushes that were covered with buds in 5 weeks". But enough raving about what it has done for others and let us tell you about the product itself.

Actually GRO-MULCH is not new. In 1941 Robert L. Ripley's famous "Believe It Or Not" column gave the story about the egg-plants grown by Lawrence J. Russo of New Roads, La., who had used the material before it had been named. The story with pictures, related that it was necessary to stand on the deck of a stake body truck to touch the highest piece of fruit on the plant.

South Louisiana is famous for its Spanish Moss that grows on trees in the costal areas. For over 50 years the moss has been gathered, ginned and sold as a mattress and upholstery stuffing. The by-product of this ginning operation has been piled along the banks of bayous and other streams near which the ginning operation usually takes place. These deposits literally teem with earthworms that are particularly fond of the soft bark of Spanish Moss. The value of earthworm castings as a plant food is well known. In addition to the earthworm infestation, the floods and back-waters of the lowlands have submerged the deposits on occasions during the past years and, as a result, the material has been subjected to fish and animal excrement, a variety of dead insects and micro-organisms as well as various mineral substances. These deposits that have been aging for 25 or more years were discovered and purchased by the manufacturer of GRO-MULCH. The material is brought into the plant where it is dehydrated, refined and packed into bags.

GRO-MULCH is a dry pulverized material that CONTAINS NO CHEMICALS, and may be used safely on the tenderest plant. It is a combination "Soil Conditioner—Mulch—And Plant Food and should be used with soil (or sand) in proportions varying from 10 to 50% depending on the type of soil. Our recommendations for known uses on certain plants will be sent with each order. One of the best features of GRO-MULCH is its long useful life. We have under experiment a fine Rose bush growing in a water bucket filled with 1/3 Gro-Mulch and 2/3 soil. THIS PLANT HAS BEEN GROWING AND BLOOMING FOR A LITTLE LESS THAN THREE YEARS WITHOUT THE ADDITION OF ANY FOOD WHATSOEVER. Roses, as everyone knows, are notorious feeders.

National distribution of GRO-MULCH is just being started. Since it is not available in most areas, we have established a Zone Warehouse at Chattanooga and are prepared to handle mail orders. 10 and 25 pound packages are shipped by PREPAID parcel post. 50 and 100 pound packages are shipped by Rail or Motor Freight EXPRESS COLLECT. Since we prepay charges on 10 and 25 pound packages, it will be necessary to compute the price of the package depending upon the distance you live from Chattanooga. We invite you to try GRO-MULCH and prove to yourself why it is referred to as "Mother Nature's Finest Plant Food". Personal Checks accepted but no COD orders.

| Package | Zone 1-2 0 to 150 Miles | Zone 3 150 to 300 Mi. | Zone 4 300 to 600 Mi. | Zone 5 600 to 1000 Mi. | Zone 6 1000 to 1400 Mi. | Zone 7 1400 to 1800 Mi. | Zone 8 1800 Mi. and up |
|---|---|---|---|---|---|---|---|
| 10 lbs. (Prepaid) | $1.88 | $1.98 | $2.20 | $2.36 | $2.52 | $2.73 | $2.94 |
| 25 lbs. (Prepaid) | 3.98 | 4.20 | 4.58 | 4.92 | 5.35 | 5.86 | 6.37 |

50 lbs. $5.50 shipped freight collect in all zones.

100 lbs. 9.75 shipped freight collect in all zones.

## SCHROEDER'S, Inc.

•

**GRO-MULCH *Distributor***

•

(Post Office Box 8066)
CHATTANOOGA, TENN.

**MAIL ORDER**

Please ship ..... pounds of Gro-Mulch.

I am enclosing $.....

Name .....

Address .....

City ..... State .....

(ORGANIC GARDENING)

**keep pests away night and day**

Shiny aluminum strips crackle and flash. Scares robins, pigeons, all birds and animals from gardens, bushes and trees. **Protects seed as well as crops.** Easy to use.

***Package of 10 only 25c***
***4 pkgs. 1.00 postpaid***

**for garden shrubs, vines, flowers and vegetables**

Attractive Portco **Quick-ties** with wire center secure your flowers with a twist of the fingers. Saves time. **Quick-ties** are permanent . . . weatherized with resin. **Quick-ties** are round shaped to cushion delicate stems. ***Package of 80 25c***
***4 pkgs. 1.00 postpaid.***

**PORTCO**
**CORPORATION**
VANCOUVER, WASH.

# Organic Gardening

VOL. 16, NO. 5 MAY 1950

## IN THIS ISSUE

**COVER DESIGN**

***Eighteenth Century Arrangement for the Governor's Palace in Williamsburg, Virginia*** **by Mrs. John R. Fisher. Fresh flower arrangement in Worcester bowl. Philadelphus, pink peonies, pink poppies, yellow and white Spanish iris, blue Siberian iris, blue cornflowers, and baptisia.**
***—Courtesy of Colonial Williamsburg***

Forum ... 3
Editorial—The New Organic Method ... J. I. RODALE 14
Mr. Oka Makes A Lawn ... JULIE BEDIER 16
Soil and Health Foundation ... 17
Men Of Organic Farming—Lady Eve Balfour ... JORIAN E. F. JENKS 18
Insects Are Their Meat ... CHARLES E. BOOTH 22
Threshing and Home Flour Mills ... ALDEN STAHR 24
Buttercups and Crowfoots ... G. L. WITTROCK 26
Save the Pollinating Insects ... FRANK C. PELLETT 29
Which? Humus or Malnutrition ... J. WERDEN CLARK 30
Miscellany ... J. I. RODALE 33
There are Profits in Mistakes—Part I ... LEONARD WICKENDEN 36
Flower Arrangements ... ANN ANDREWS 39
Cancer—Part XIII—Sugar (C) ... J. I. RODALE 40
Eat Foods—Drink Water ... MELVIN E. PAGE, D.D.S. 43
Clay At Rab's Corner—No Digging ... V. POLIAKOFF 45
Garden Calendar for May ... WILLIAM H. EYSTER, PH.D. 46
Seminar on Organic Fertilizers ... WILLIAM H. EYSTER, PH.D. 48
Gadget for the Garden—Jug Greenhouse ... NORMAN SPANGLER 50
Hints For the Flower Garden ... 51
Hints For the Vegetable Garden ... 52
New Books ... 53
Formal Garden—Alexander Craig Garden ... 54
Readers' Correspondence with Dr. Eyster ... 56

J. I. RODALE, *Editor and Publisher*
DR. WILLIAM H. EYSTER, *Managing Editor*
WILLIAM ACKERMAN, M.S., *Associate Editor*
JAMES F. BAIRD, JR., *Advertising Manager*
ROBERT RODALE, *Staff Photographer*
KARL MANAHAN, *Art Director*
ANN ANDREWS, *Flower Arrangement Editor*

Published monthly by ORGANIC GARDENING. Publication, Executive, Editorial and Subscription Offices: 6th and Minor Streets, Emmaus, Pa. Advertising Offices: 46 S. West St., Allentown, Pa. Subscription Rates, United States and Possessions, One Year $3.00, Two Years $5.00, Three Years $6.00. Unless otherwise directed all subscriptions begin with the current issue. Renewal subscriptions begin immediately after old subscription expires. When changing an address, give the old address as well as the new. Manuscripts should be accompanied by full return postage and a self-addressed envelope. Printed in United States of America. Copyright 1949 by ORGANIC GARDENING. Entered as second class matter January 27, 1943, at the Post Office at Emmaus, Pa.; under the Act of March 3, 1879.

## RECLAIMING A PEAR ORCHARD

Through my business of propagating Earthworms commercially, I have naturally made some rather good contacts, and as my motive for my work has never been primarily to make money but rather to further the Organic Movement in every way possible, I have followed up anything that I felt could be developed into something good. In this way, I have been watching an orchard of pears (bartletts) consisting of seven acres of trees. The details of this little transaction would in itself make a good little story and is being used in the book I am hoping to finish some day and send, possibly, to you for publication. However, the fact I wish to give you now, is that I have succeeded in convincing these good people that I can and will find a source of outlet for this fruit of theirs. Fortunately for us the orchard is quite isolated from other orchards in the valley that are in the "spray" program and so is not contaminated indirectly. Also a near neighbor "keeps bees." At one time this orchard was one of the best orchards in the valley and its fruit always sold at premium prices. However, the owner passed on and the place changed hands several times, but the orchard was never cared for in any way and had neither cultivation, irrigation, pruning, sprayings, or doses of commercial fertilizers. In spite of all this, fruit picked at random from the trees by myself over a period of two years showed worms to be almost non-existent and, it is my opinion that the percentage of "culls" in this orchard would run far below that of any orchard in the

BCA

**BACTERIAL COMPOST ACTIVATOR**

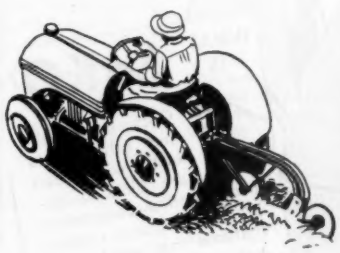
A REVITALIZED BACTERIAL CONCENTRATE THAT WILL ENRICH YOUR SOIL, INCREASE GROWTH, AND HASTEN COMPOSTING.

- **B. C. A. is a mixed concentrated composite containing a multitude of soil bacteria developed specifically for the rapid breakdown of mixed organic wastes in the compost heaps, on the soil, and in compost boxes.**
- **B. C. A. has phosphate rock incorporated in the culture which contains the 26 necessary minerals. Enough phosphate rock is in the Activator so that adding it separately to the heap is not necessary.**
- **B. C. A. contains the trace elements lacking in many soils and so necessary for best results.**
- **B. C. A. is a neutral culture prepared with conditioning food for the bacteria in a rich peat base.**

SPEED UP COMPOSTING *WITH* B. C. A.

**In your house, in your garden, and on your farm, there is nothing more valuable than B. C. A. Quality compost in less time is now a reality. Both new and old method are enhanced by the use of B. C. A.**

**B. C. A. can be used with great success in the New Sheet Mulch Method of Fertilizing. Applied directly to the soil mixed with raw organic matter, B. C. A. will speed up the break-down of the mixed wastes.**



HOUSE PLANTS WILL GROW WITH AMAZING ZEST WHEN YOU ADD A SMALL AMOUNT OF B. C. A.

**B. C. A. may be added directly to house plants for increased growth, more luxurious blooming, and richer color. Just a small amount of B. C. A. planted around each seed or a thin covering on the soil of potted plants will produce amazing results. B. C. A. helps regulate moisture and air in the soil.**

**B. C. A. is excellent for the increased growth and rapid reproduction of earthworms.**

**ALL ORGANIC — NO CHEMICALS**

*Due to direct distribution—no dealer profits—we can offer you the low prices listed below—*

ORDER ALL PURPOSE **B. C. A.** TODAY TO ASSURE MAXIMUM USE

**ORGANIC PRODUCTS, Dept. G5**
**235 Halsey St.**
**Newark 2, N. J.**

**Gentlemen:**

**I enclose check or money order for the following:**

☐ **5 lb. size ($2.00 postp'd). For approx. 2 tons compost or an average garden.** (West of Mississippi, $2.50)

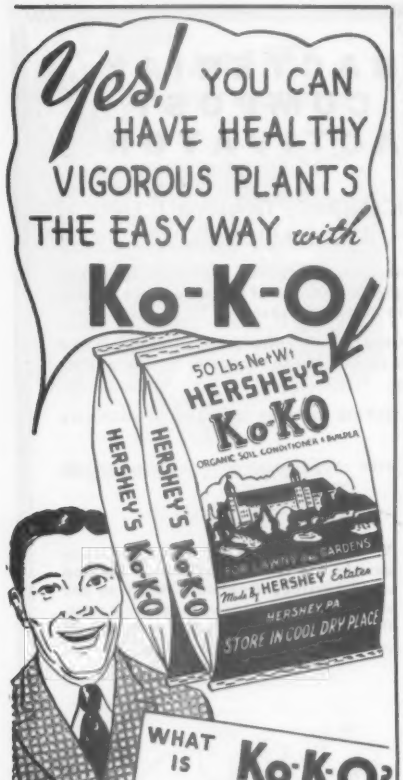
☐ **15 lb. size ($5.00 postp'd). For approx. 6 tons compost or a large garden.** (West of Mississippi, $6.00)

☐ **More information (FREE) concerning B. C. A.**

**Name** .....

**Address** .....

**City** ..... **State** .....


Yes! YOU CAN HAVE HEALTHY VIGOROUS PLANTS THE EASY WAY with Ko-K-O
50 Lbs Net Wt
HERSHEY'S Ko-K-O
ORGANIC SOIL CONDITIONER & BUILDER
HERSHEY'S Ko-K-O
HERSHEY'S Ko-K-O
FOR LAWNS and GARDENS
Made by HERSHEY Estates
HERSHEY, PA.
STORE IN COOL DRY PLACE
WHAT IS Ko-K-O?
Cocoa bean shells and other parts of the cocoa bean are blended expertly and sweetened to produce a natural, organic material that will furnish a steady source of humus for the soil.

## FOR LAWNS AND GARDENS

- **Apply Direct to the Soil**
- **Mix in the Compost Heap**
- **FEED TO EARTHWORMS**

*An essential material for the Organic Gardener*... A slow-acting, long-lasting energizer that increases and replenishes the organic content of the soil... Improves soil texture... absorbs and retains plant-nourishing moisture... helps decomposition of soil break-up into humus... binds sandy soils... loosens clay soil.

**Packed in Handy 50 Lb. Bags**

**If your dealer cannot supply you** we will ship direct to you where Pick-up and Delivery is available; if not available shipped to nearest freight station. Freight prepaid East of Mississippi River. (Write for freight rates West of Miss. R.)

**NEW LOW PRICE**

Send $1.00 for each 50 lb. bag; enough for 200 sq. ft. of NEW lawn or garden. Minimum Shipment 100 lbs. (2 bags)

**HERSHEY ESTATES**

HERSHEY, PENNSYLVANIA


valley that is under the association's program.

Now this orchard has had a "dose" of worm culture under the trees followed by a "dose" of barnyard fertilizer, followed by a heavy mulch of shavings.

MRS. WILMA E. BEYER
Gold Hill, Oregon.

—o—

## A HOME-MADE COMPOSTER

Here is an experiment I used last year when I built up a compost supply. I removed what was left of the bottom of an extra large garbage can, leaving a cylinder which was open at both top and bottom. I placed it in an out-of-the-way corner and proceeded to build my compost in the usual way, putting cuttings, peelings, dirt and compost starter and plenty of water to settle it faster and more firmly. This made it possible to put grass cuttings in it all summer. During the summer as I needed compost for the garden, I tipped the can on its side and dug the ripened compost for the beds from the bottom. I set it erect again and continued to water and fill it for future use. This seemed tidier and took less space than any other plan I had found, two factors which have to be considered on a city lot, as well as making the ripe compost available when it was needed.

Mr. Cecil Solly
1411 Fourth Avenue
Seattle 1, Washington

—o—

I have been reading very carefully the first issues of *Organic Gardening*, that we have gotten and there are a few things I would like to bring up.

First of all, my mother would like to get the recipe for that whole wheat bread that doesn't need kneading, which you mentioned in the article, "Two-by-Four Farm"—O. G., August, 1949. She doesn't seem to have the results she'd like to have with her present recipe.

## *New Life for Gardens*

Q. R. Compost-Maker changes all vegetable waste in a few short weeks into rich, sweet-smelling compost with a thriving worm population which ensures soil yielding bigger, better crops and lovelier, finer-scented flowers. Its results are really remarkable.

PURELY HERBAL—NO CHEMICALS

For economy of time, cost and labour Q. R. is unrivalled and its use may be profitably continued without fear of ultimately impoverishing the soil.

NO TURNING NEEDED WITH Q. R.

*"The compost made with Q. R. brought most gratifying results in our garden and we are very enthusiastic about it". (Ohio).*

*"Q. R. has given marvelous results with our Gladioli, Delphiniums, Bench Roses, and particularly with Strawberries". (Minneapolis).*

**TESTIMONY FROM ALL OVER THE WORLD**

# QR
# HERBAL ACTIVATOR

***Special Offer to Readers***

**To encourage you to try Q. R. we are supplying a large Package.**

Special Price **$1.00** Post Paid

**Obtainable from JAMES S. WELLS**
**P. O. Box 45, Deerfield, New Jersey**

***Proprietors and Manufacturers:***
**CHASE LTD., CLOCHE HOUSE, SHEPPERTON, ENG.**

**SALE! Premium Grade**
## GLADIOLUS
## 100 BULBS $1.65

Don't miss it! Startling offer to "get acquainted"! The Bulb Club is offering top quality bulbs. All 2" diameter and more. Direct from our best Holland growers. Each of the 100 bulbs is pedigreed stock...*guaranteed* to flourish with heavy masses of large blossoms. Balanced mixture of pure brilliant colors. Plant at 2 week intervals. Now is the right time to start your succession of gorgeous displays. Limit 300. Order now, sent postpaid.

**BULB of the Month CLUB Dept. OGG**
**125 W. Madison Av., Chicago**

We have had our interest in natural living stimulated considerably within the last few years because of what happened to my father. He had been suffering from stomach ulcers and heart trouble for a number of years. He kept getting worse, no matter what doctor he went to, until we thought he was going to die soon. In desperation he tried an "unorthodox" healing science that stressed natural living and got amazing results. Since then we have been eating more raw, whole foods, used natural raw sugar, sea salt, unpoisoned molasses and unpoisoned flour. The raw sugar is very rich in minerals and vitamins and tastes sweeter than refined sugar. The sea salt is also able to replace minerals our other food may be lacking. We find the sea salt very good for preventing colds when used as a gargle. If one of us gets the sore throat that usually precedes a cold, he or she gargles with sea salt a number of times that day and in most cases no cold develops. Both the sugar and salt can be gotten from a health-food store near here. The molasses we have been using is "Grandma's Old Fashioned Molasses." It doesn't contain the poisonous preservative, bleach, sulphur dioxide. It's manufactured by the American Molasses Co., New York, New York.

I have heard that corn syrup is made of ¾ acid and ¼ corn solids. That doesn't sound very healthful.

We have had an interesting experience with yellow jacket wasps. We had been killing them every year, because we considered them dangerous, until we noticed they ate cabbage worms. This year we left the wasps alone and had much less trouble with cabbage worms.

Does a person have more trouble with wind erosion with organic farming than with other farming? We have heavy clay soil on most of our 160 acre farm and so we have to do our plowing in the fall. If we plow in the spring and get a dry year our crops dry up. As a result of the fall plowing we have some wind erosion. We have used *very little*


# *Biggest News in Gardening!*

TRY THIS ORGANIC DISCOVERY OF SCIENCE AND SEE IF YOU DON'T AGREE

Makes compost quicker, easier, cheaper and better out of difficult materials.

•

Use even sawdust and chaff. Compost garbage and sludge without odor! These make the richest humus known to man!

•

See the magical difference it will make in weak, sluggish soils—just a few handfuls mixed into soil. It conditions, activates—adds life, energy and vitality.

•

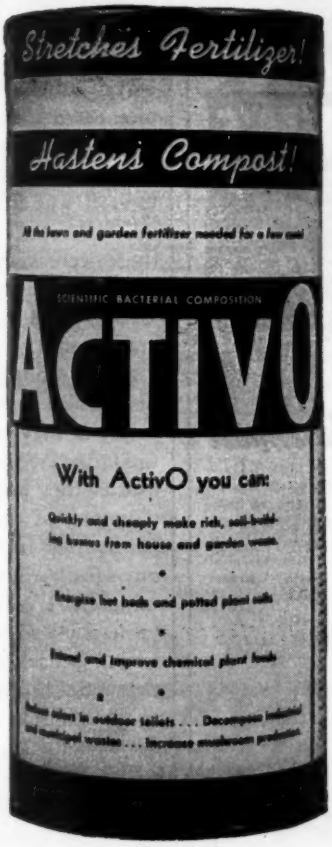
Use ActivO to reduce odors in outdoor toilets—while it converts the waste into an ash-like fertilizer-humus.

•

All organic—no chemicals! Nature, herself—*amplified*, and packed in a can! SEND NOW FOR *ALL*, THE INTERESTING DETAILS.

•

*Please do not accept substitutes.* There's NOTHING like it; nothing "just as good".


Stretches Fertilizer!
Hastens Compost!
All the lawn and garden fertilizer needed for a few cents
SCIENTIFIC BACTERIAL COMPOSITION
ACTIVO
With ActivO you can:
Quickly and cheaply make rich, soil-building humus from house and garden waste.
Energize hot beds and potted plant soils
Extend and improve chemical plant foods
Reduce odors in outdoor toilets . . . Decompose industrial and municipal wastes . . . Increase mushroom production

Plant a little with each seed and see the difference in your plants—and the yield! Flowers, too, have better color.

•

Use ActivO to make your own organic fertilizer and liquid manure — quickly (complete directions tell you how to do this and dozens of other unusual garden tricks.) Use it in hot beds, or to make hot beds without manure.

•

ActivO is a rich, black, velvety humus fortified with billions of Nature's own beneficial micro-organisms, hormones, vitamins, minerals and the mysterious biotics, Nature's balancers.

•

Its cost is amazingly little. (See below.) And it's *good for* your compost, *good for* your soil, *good for* EARTHWORMS.

•

At dealers in sizes at 35c, $1.00 and up. See your dealer TODAY — now. If your dealer doesn't have it, use handy coupon below. (If your state has a sales tax, please add.)

MAIL TO BENSON-MACLEAN PLANT PRODUCTS, Bridgeton 44, Ind.

Northeastern States: Address ActivO-Soilservice, P. O. Box 131, Townsend, Mass.
West Coast: Address ActivO West, P. O. Box 227, Rivera, Calif.

Inclosed is ..... for $..... Send the following: (Add 10% West of Rockies)

☐ No. 7 size for 1350-1700 lb. compost, at $2.00 ea. postpaid.

☐ No. 50 size, for 6½ tons, $11.95, freight collect with FREE plans for building Composter Cabinet pictured below.

☐ No. 100 size (12 tons), with free plans, $19.95, freight collect.
(Other sizes at dealers)

Prices do not include state sales taxes.

☐ FREE literature—ActivO and composting.

Name .....

Address .....

P. O. and State .....

SHIPPING POINT If different from P. O.

Garden Supply Dealer's Name .....

And Address .....

ActivO makes compost in sanitary CABINET — in basement, garage or tiny backyard. Free plans with No. 50 and 100 sizes. Check above.

"Acto" in Canada

ACTIVO

MORE THAN A COMPOST HASTENER!

# PERMANENTLY ENRICH YOUR SOIL

with this
safe, effective
NON-ACID PLANT FOOD

RUHM'S PHOSPHATE ROCK
*Best by Every Test!*

IT'S THE
*Finest Phosphate Made*

It's by far the most finely ground (85% through 300 mesh screen). Phosphorus content is high-moisture content low. It is uniform—fully guaranteed. Even one application gives excellent results first season and for years to come. Can be applied any time. Three generations of successful farmers and gardeners attest its worth. **Investigate!**

**Ruhm's Gives the Best Results**

*For Price, Full Information write*

AUSTIN FEED AND SEED CO., Chattanooga, Tenn.
BRYAN & SHEFFER, Portland, Ind.
ENGLEWOOD FARM-NURSERY, R. 5, Muskegon, Mich.
A. GRAMS AND SONS, LaCrosse, Wisconsin
J. E. HARRIS, Box 28, Ames, Iowa
SOILSERVICE, Townsend, Mass.
VAUGHAN'S SEED STORE, Chicago 6, Illinois



**HELP HELP!**

Give these old folks a break! ActivO can cure the "house out back" of unpleasantness. Just sprinkle over waste. Odors reduced or eliminated. Waste converted into ash-like fertilizer-humus. $1 size good for many treatments. . .ActivO also amazingly useful for making compost, activating soils and lawns, feeding potted plants, growing mushrooms, etc. Immensely valuable for FARMING or GARDENING. Send for complete free details. Liberal-quantity sizes $1. and $2. Dealers, or Benson-Macisaac, Dept. 44, Bridgeton, Indiana

NO ODOR!

**ACTIVO**


commercial fertilizer, plowed the grain straw down and used cattle manure (uncomposted) on the soil. I wonder if the soil's high humus content might encourage the wind erosion. Do you know of anything to prevent this?

Last year we cleared some virgin soil of its wild raspberry and elderberry bushes and planted some potatoes, carrots, and watermelons there. We thought that everything should grow well there, because the black top-soil was 9"-12" deep, but when we harvested the things this fall there were very few potatoes, small carrots and several large melons. Others have had the same experience. Could you tell me why?

Some of our calves like to chew on boards and some of them seem to do better if they can eat red clay from the farm. Do you know what that indicates they are lacking?

In one of the articles in *Organic Gardening* it was mentioned that our soils have been depleted of their minerals. I read of where a farmer built a machine that picks up field stones, smashes them, and drops the smashed stones back on the soil again. Shouldn't this replace a lot of the minerals?

I believe you would be interested in a lot of the literature published by the Responsible Enteprise Assn. of 1232 Majestic Building, Detroit 26, Michigan. You can write to them and ask for a list of their literature and some free samples. I believe that they would be interested in some of your books. Good organizations like yours should get together.

I read your articles on cancer with interest and am enclosing a report on some cancer research. Have you heard much about X-ray caused cancer?

Yours truly,

DONALD SWENSEN
Valders, Wisconsin.

P. S. We also drink raw milk, which contrary to common opinion is less likely to spread undulant fever than pasteurized milk. Responsible Enter-

(*Continued on page* 10)


*Ready, Set... GROW with*

# BIO-GRO

*The only true*
**LIQUID FISH FERTILIZER and ORGANIC PLANT FOOD**

- **Promotes Growth of FLOWERS, LAWNS, BUSHES, VEGETABLES, POTTED PLANTS...**
- **CONCENTRATED—Ready for Instant Use...**
- **Has NO UNPLEASANT ODOR!**

You'll be amazed at the way your growing things **thrive** on **BIO-GRO!** It's absolutely NEW; a liquefied organic fish fertilizer with added micronutrients. Nutritionally complete—neutral in pH—absolutely SAFE for all plants. ECONOMICAL, too. One pint makes 40 to 100 gallons of nourishing, pure liquid plant food.

**You can get BIO-GRO from most seed stores; or order by mail. Pint cans $1.00; quarts $1.50; or half-pint trial size 60c—all postpaid. Write "BIO-GRO Division, Bioproducts."**

ORDER NOW!

**Make this year's garden your finest ...with BIO-GRO!**

MANUFACTURED BY
**BIOPRODUCTS** Oreg. U.S.A.
WARRENTON, OREGON



# ACTUMUS

**Fertility Builder (odorless) 100% organic**

For good results this spring and summer water your seedlings, plants, flowers, vegetables, shrubs, bushes and trees **regularly** with liquid ACTUMUS. For as little as 1c for every 3 gallons they will grow healthy, yield good crops, lovely flowers and fruit. In cans ¼ lb. **$1.25**, ½ lb. **$2.25**, 1 lb. **$4.25** (1 lb. makes up to 1500 gallons) **AT YOUR DEALER** or mailed postpaid by **ORGANIC SUPPLIES, P. O. B. 820, Pittsfield, Mass.** Dealers' and Jobbers' enquiries invited by **FOREIGN PRODUCTS CORPORATION,** Importers, **1270 Broadway, New York 1.**

*Approved by professional engineers.*

# *Keston* ORGANIC *SHREDDER*

Patent Pending

**SHREDS every kind of compostible materials for MULCHING and COMPOSTING. Serves also as a MIXER for QUICK MACHINE COMPOSTING. Ideal for both OLD and NEW methods.**

**Shredder based on improved cutting principle with 80 case-hardened steel knives arranged to shred finely regardless of whether in green, dry, wet, or decayed condition. Stationary or portable. Fafnir type sealed bearings. Built and guaranteed by high class equipment manufacturing company. Can be operated with power take-off.**

Patent Pending

*Only* **$125,** f.o.b. Factory in Pa.

**ACCESSORIES**

| | |
|---|---|
| ½ h.p. electric motor | $34.00 |
| 1½ h.p. gasoline engine | $44.00 |
| Clutch, for easy starting of gasoline engine | 10.00 |
| Portable features, as illustrated | 17.50 |

**One of Organiculture's Greatest Assets—*Order a Keston Now!***

## FERTOSAN
### Compost Accelerator*

A new type of compost starter containing carefully selected bacteria and fungi for quick composting. Compostible, shredded materials quickly converted into rich manure. 1-ton unit, **$1.00**; 5-ton unit, **$2.50.**

## EARTHWORM
### Culture-casting Cabinet**

An electric cabinet designed so that the castings are deposited in a separate moist chamber. 1000-worm size **$19.50.**

## KESTON
### HERBAL ACTIVATOR*

For Quick Composting. **No turning!** 100% herbal—organic. Made in U.S.A. Enough to activate 5 Tons.....**$1.00**

**ENZ-BAC*** All-purpose compost starter with the enzymes and composting organisms. 1-ton unit **$2.00**; 5-ton unit **$8.00.**

## B-D COMPOST STARTER*

Scientifically formulated in a Biochemical Research Laboratory. 1-ton unit for **$2.00**; 5-ton unit for **$8.00**; 10-ton unit for **$14.50.**

## Grist Mills for the Home*

A hand-operated grist mill, with adjustable burrs, for making your own whole-grain flour or cereal. Capacity, a pound an hour. Grinds all grains, coffee, spices.....**$7**

*Write for prices for larger and power models.*

## FULCRUM*

To convert your garden fork to no digging.....**$3.50**

## EARTHWORMS*

Specially bred composting earthworms **$6.50** per 1000.

Terms: Cash with order. * Prepaid—add 10% West of Mississippi. ** F.O.B. Factory.

## ORGANIC IMPLEMENTS & PRODUCTS CO.

**PHILIP S. WELLS**
**P. O. BOX 104, HADDON HEIGHTS, N. J.**

---

*JUST WHAT I NEEDED TO IMPROVE MY LAWN. SAVES TIME AND WORK TOO.*

# MOW-MASTER
## *Triple Duty* POWER MOWER

## IDEAL FOR THE ORGANIC GARDENER

**IT CUTS — PULVERIZES — MULCHES**
**ALL IN ONE EASY OPERATION**

You are right in step with organic gardening principles if you have a MOW-MASTER. Besides doing a wonderful job of mowing, MOW-MASTER helps build up your soil the organic way. It thoroughly pulverizes grass and weed clippings or autumn leaves and returns them to the soil as mulch and humus. It eliminates raking, hauling or burning of cut grass and weeds or autumn leaves and keeps yard neat and clean. The amazing New Grind-a-Leaf attachment converts MOW-MASTER into leaf pulverizer, quickly, easily.

The 1950 MOW-MASTER IS NEW! It is improved! It has many new features —lighter than ever, yet built for many years of service. Powered by 2 H.P. smooth-running POWER-PAK Engine. Cuts 21 inch swath. Adjustable cutting height. Easy to run. Economical to operate. See this remarkable mower at your dealer's.

*Mows Anything Anywhere*

MOWS LAWNS VELVETY SMOOTH

CUTS TALL GRASS AND WEEDS

PULVERIZES LEAVES, ABOLISHES RAKING, HAULING, BURNING

**FREE** booklet "POINTERS ON MAKING GOOD LAWNS" and our MOW-MASTER Literature sent upon request.

**PROPULSION ENGINE CORP. Dept. OG5**
**7th ST. AND SUNSHINE ROAD, KANSAS CITY 15, KANSAS**

**GIFTS FOR THE HARD TO PLEASE**

**Quaint Personalized Marriage and Anniversary Plates** with bride and groom names baked in. Donors name and congratulatory message inscribed free. Decorated with vivid blue and rust Penna. Dutch Floral Design on cream plate. Size 10½".
**PRICE $12.00 postpd.**

**Salt and Pepper Shakers.** Hand decorated with Penna. Dutch Floral Designs similar to above. Excellent for bric-a-brac. 4" high.
**PRICE $2.00 pair, postpaid.**

***Sorry no catalog. Allow two weeks for delivery.***

*Melvin G. Kleppinger*
*Ceramics*
**P. O. Box 212** **Emmaus, Penna.**



***Program Problems?***
**SHOW JOHN OTT MOVIES**
with famous time-lapse photography — especially suitable for clubs, churches, schools.

**FLOWER FILMS** with remarkable time-lapse pictures of growing flowers, amazing plant oddities, delightful Waltz of Flowers. How to Grow Iris, Dahlia, Gladiolus, Roses. 16mm sound-color.

**OUR CHANGING WORLD** Story of earth's creation and geological development. History of plant and animal life shown in dramatic time-lapse and microscopic pictures. Nature's geological wonders in glorious color, climaxed by unique calendar of the ages. Scientifically accurate. Inspirational, educational entertainment for any audience. 16mm sound-color—1 hr., 15 min.

*Write for FREE BULLETIN*

JOHN OTT FILM LIBRARY, Inc.
730 ELM STREET — WINNETKA, ILL.



**BEAUTIFY YOUR GARDEN**

Build from our detailed Plans or assemble our Kits. Authentic
DUTCH WINDMILLS
LIGHTHOUSE
LAWN CHAIRS
GARDEN ARBORS
TRELLISES
BIRD HOUSES
FLOWER BOXES
and many other home and garden projects.

**Also a fine selection of patterns for beautiful FAIRY TALE LAWN FIGURES, LAWN ANIMALS and BIRDS. Over 50,000 Satisfied Customers.**

***Send 10c for fine, illustrated CATALOG.***

**CRAFTSMAN'S MODEL COMPANY, Dept. O.G.-2**
**DELAFIELD, WISCONSIN**



**Raise RABBITS!**

**Commercial producers needed everywhere. Big income for full time, or supplement present endeavor in spare time. We teach you. Send 25c for bulletin, prices, hutch plans, etc. Get into this industry now.**

**RABBIT FEDERATION**
**200 Burrell Building, Dept. G**
**San Jose, California**


***September Issue on Bulbous Plants***

The September issue will be especially dedicated to bulbous plants. Organic Gardeners are invited to submit articles for this issue.

# *What's New* AT HOME AND IN THE GARDEN

***Gardener's "Glance" File***

A new, convenient finger-tip file for gardeners, special plant collectors and nurserymen has been introduced called GLANCE. This new Glance File combines, in simple indexed form, all the latest, correct scientific and cultural instructions of gardening with flowers, shrubs, trees and vegetables, and, a special card system that permits a permanent record of your own planting experience.

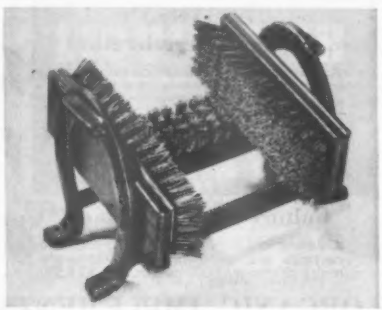
Space is systematically divided on each card for complete history of individual planting—the plant's family, genera and specie name, from whom it was purchased, its cost, date planted or sown, location, blooming and resting period, plus a progress record of its habits and growth, etc.

Finished in attractive dark green leatherette, this sturdy file box stands years of handling plus the heat and humidity of the greenhouse. Of convenient size—4½" x 5½" x 8½", the box holds 150 8" x 5" cards with ample space for extra card data and clippings. Produced and distributed by GLANCE, 406 Elm St., Cincinnati 2, Ohio.

—o—

***Bootscraper***

The entire family will use and mother will enjoy the "Lucky" Bootscraper; it keeps dirt outside and floors sparkling clean. Real horseshoes, electric welded to rugged iron crossbars, support three stiff brushes —two mounted on horseshoes and one across bottom to whisk away dirt in a jiffy. Front crossbar scrapes stubborn mud off soles. Caulks are drilled for easy attachment. "Lucky" Bootscraper is 11½ inches long, 8½ inches wide and 6½ inches high; durable weather-tested satin black finish; $5.95 in stores or postpaid. Valley City Forge, Box 704, Kalamazoo, Michigan.



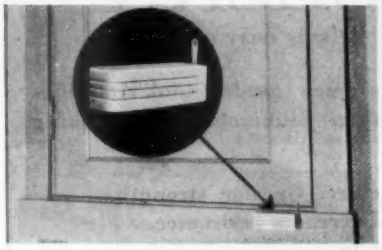
—o—

***Seedling Spoon***

The Meko Seedling Spoon is a practical gardener's invention. He noticed that no matter how carefully he handled the delicate seedlings, they always had setback when moved, and some were lost entirely. Wasn't there some way to transplant without setback? The Meko Seedling Spoon is his answer. By using it you will find your seedlings continue to thrive almost as if they had not been transplanted. These gadgets sell for $1.39 at all stores or $1.50 direct from factory. Meko Co., 5547 Upton Ave., So., Minneapolis 10, Minn.

### *"Alert Alarm"*

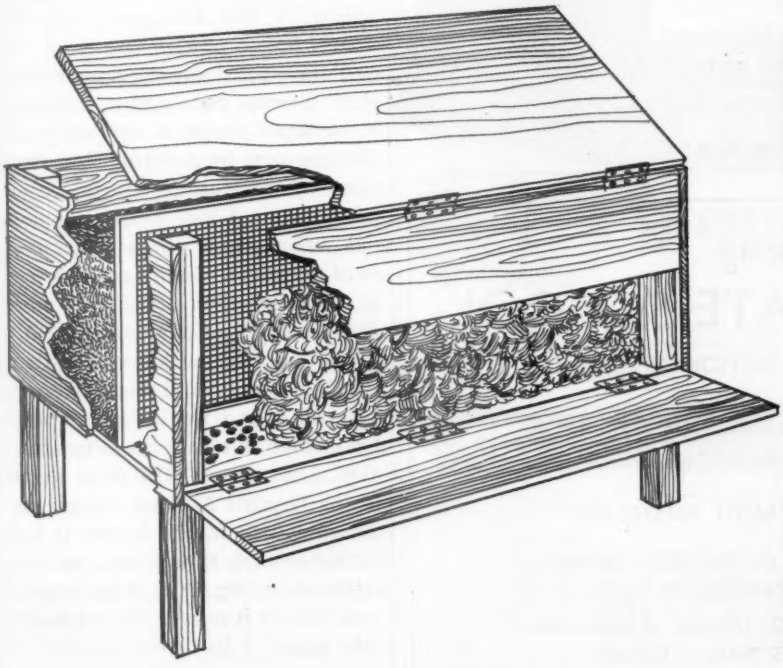
America's newest burglar and intruder alarm, the "Alert Alarm" is now ready for national distribution. This effective yet inexpensive necessity is powered by a self-contained electric unit which requires absolutely no wiring. Fully guaranteed, the unit is easily attached to any door or window with only two screws. This home protector will sound a continuous ear-piercing alarm at the slightest opening of door or window —enough to make any prowler take to his heels and to alert the household. Attractively cased in ivory or walnut finished plastic, this compact unit retails for only $1.98. Further information about "Alert Alarm" may be obtained by writing to Electromagic Company, 1003 Penn Avenue, Pittsburgh 22, Pennsylvania.



—o—

### *Earthworm Culture-casting Cabinet*

This earthworm culture cabinet consists of a *living room,* away from you in the illustration, and a *lavatory,* the side toward you in the accompanying drawing. The partition between the living room and lavatory is made of ⅛ inch hardware cloth. The earthworms live and dine in the larger room, and drop their castings in the smaller chamber. The behavior of the earthworms is determined by a unique patentable feature which causes them to drop their castings in the smaller room. By opening the doors, as shown, the castings can be easily removed for use. This cabinet may serve as a fertilizer factory for all who love plants, including apartment house occupants. Limited amounts of garbage can thus be converted into fabulously rich compost. Produced and distributed by the Organic Implements and Products Company, P. O. Haddon Heights, New Jersey.

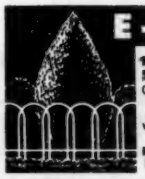


***Individual Plastic Greenhouses!***

Durable transparent plastic caps proven many times more effective than paper caps. Gives 2-weeks advantage when used on tomatoes, melons, strawberries, flowers, etc. . . . Conserves moisture, easily ventilated, easy to set, lifts for weeding. Plants always visible. Users claim that HOT-OUSE almost draw seed out of ground! Stack for storage. Size 5x8x5 in. high. Last for 5 to 7 years.

**Sample Order—1 doz. $3.00 25—$6.00**
**50 only $11.75 — 100 - $23.00**

**MARTIN ROBERTS COMPANY**
**838-O Symes Building, Denver, Colo.**



**E-Z-GARDS**

**PROTECT YOUR EVERGREENS, SHRUBBERY, FLOWERS AND LAWN**
Ornamental design adds to beauty of yard or garden.
Self-Supporting—No Stakes or Posts!
Easy to set up and just as easy to remove.
WRITE US FOR LITERATURE, PRICE AND NAME OF NEAREST DEALER.
BROADWAY MACHINE & MANUFACTURING CO.
Dept. O SHELBYVILLE, INDIANA

**Permatag**
**ALUMINUM MARKERS**
RUSTPROOF - ALWAYS LEGIBLE
*Just write into the metal*
Ask your dealer or write direct. 96 (4 pk.) $1 pp.
**Western Growers Supply Co.** 2770 E. Walnut. Pasadena. 8. Calif.

Catalog Free

World's Finest
**WREN HOUSE**
Will pay for itself in one season through savings from insect damage. Made of precious, lifetime red cypress with features found in no other bird houses. Results guaranteed. Postpaid $5.00.
**HILLSIDE HARBOR**
La Fayette New York

WOULD YOU LIKE A
**WEATHERVANE**
FROM YOUR OWN DESIGN?
•
*A PET—BUSINESS TRADEMARK—*
*FAVORITE SPORT—A CLEVER IDEA.*
•
**Write EARL AVERILL, Adams, N. Y.**

**POTS for AFRICAN VIOLETS**
4" "Squatty" Clay Pots, dark red in color and with excellent porosity, are ideal for AFRICAN VIOLETS. Has specially treated edges to help prevent sloughing off of leaves. Used by florists for growing violets, and recommended as one of the best for good results. Shipped prepaid parcel post. 4 for $1.00 10 for $2.00
25c additional postage west of the Rockies
Prices of other sizes on request.
CERAMO CO., Box 84-E, Jackson, Mo.

## LABOR SAVING GARDEN TOOL

*Hoe by simply raking with the*

# "SELKA"

*It's as easy as that!*

**Amazing new garden tool simplifies gardening. Eliminates back-breaking labor.**

- **1. Shock absorbent joint structure. Greater strength.**
- **2. Controls cultivation depth. Decreases resistance.**
- **3. SELKA curve permits closer to plant cultivation.**
- **4. Tru-sharp 8" tempered steel blade. Holds edge.**
- **5. Weed hooker. Advantage next to small plants.**

***The SELKA alone offers these multi-features. Make one tool do your season's work. Quicker, Easier, Better. Sent postpaid for $2.95. C.O.D.'s plus postal charges.***

**SELKA COMPANY** 319 FORTY-FIFTH STREET, WESTERN SPRINGS, ILL.

## Hyper-Humus

**NATURE'S SOIL BUILDER**

**CULTIVATED and ENERGIZED**
**NOW in Moisture-Sealed Bags**

**HYPER-HUMUS comes to you in kraft, polyethylene lined 25, 50, 80 and 100 pound bags. These sturdy, moisture-sealed, easy-to-handle bags preserve all the life-giving vitality of HYPER-HUMUS for long periods.**

**The Rich Vital Soil Organic**

**HYPER-HUMUS is also now ENERGIZED for greater efficiency. Depend on it for healthy plant growth and more production. Remember, this is real humus, not peat moss. See your dealer or write us**

**HYPER-HUMUS CO., BOX 19, Newton, N. J.**

Announcing

# POST-GRADUATE SCHOOL

AMERICAN FOUNDATION for HOMEOPATHY, Inc.

23rd Session May 8 to June 17, 1950

Senexet Pines, Putnam, Conn.

EARLY REGISTRATION MOST IMPORTANT

Write to: Julia M. Green, M.D., Foundation Secretary
1726 Eye St., N.W., Washington 6, D. C.

or: Kenneth A. McLaren, M.D., Director of Instruction
321 Bloor St., Toronto, 5, Ontario, Canada


## FORUM

(*Continued from page 6*)

prise has some interesting literature on this.—D. S.

EDITOR'S NOTE: Organic soils erode very little, and if covered with a mulch or cover crop not at all. The small size of your vegetables in your humus-rich soil is doubtless the result of deficiencies of some of the elements which are essential to normal growth. This deficiency in your soil is registered in your animals which chew on boards and eat clay. Crushing field stones and returning them to the soil is an excellent way to rebuild your soil. In doing this you are working with nature.

—o—

About three years ago when I lived up in the smog country, yes, up in the Los Angeles area, I began getting your magazines. Until then my experiences with trying to raise things had about gotten the best of me. I love to work in the soil, and since I had a very tiring job, I would work at a garden for relaxation and some good healthy food, I hoped, but listening to some "good advice" I had fumigated the soil (yes, I know now, I murdered it), and then piled on the commercial stuff. I won't even call it fertilizer, for it broke my heart, and my back. All that work for nothing. And then came the revolution. My first compost converted me. Even that poor old soil gave me results that were hard to believe. Then I really began to make compost. Far, far more than I needed on my ten by twenty garden up there. I knew even then that "this was it" and someday, soon, I hoped, that I would have a place big enough to take years to saturate. Well, I got it now. The more I read of the Organic Method and my experience with it, the harder it was for me to work at anything else. On weekends I began to look around and, believe it or not, when I found "the place" I had over ten tons of

beautiful compost just teeming with earthworms, that just came from somewhere of their own accord. If I hadn't found the kind of place I had my heart set on as soon as I did, I'm afraid something would have had to move to make room for more compost, for I realized that my future and my health depended on it, and time is slipping by, "Oh, so fast."

I hauled all that compost out here and that much was only a drop in the bucket for three hundred young avocado trees and just lots of other types of fruit and nut trees for home use. The avocados are my "money crop" and it looks like I can say goodbye to the dark days of punching a time clock, for already people are coming by to sample my organically raised fruit. The ones that received compost last November, 1948 are getting ripe now, and we can tell a big difference. What will they be in a few years? What's more fun is to watch the faces of the skeptics that predicted sure failure if I didn't use that "stuff" that they were using. Well, the first thing they now say is, "Well, your trees sure look good." After the buttons stop popping off my chest I manage a little feeble, "Yeah, they do, don't they?"

I have a nice flock of chickens and rabbits. I mix their droppings with cow manure from the dairy to make compost with race horse bedding. I turn out some mighty fine compost, but now I have a problem. Sea weed. I can get tons and tons, no end, and without a doubt it does contain a bountiful supply of most everything good, but it also contains salt. Avacado trees are very sensitive, everyone tells me, and so I am just a little afraid to use it. What do you suggest, or do you know of anyone that has used it with success? I can get it fresh or dried. Do you think composting it would be sufficient, or do you think maybe I'd better let the worms work it over afterwards? And even then, has the salt been changed enough?

I am rock mulching when and


# DWARF SIBERIAN KALE

Burly Tobacco grown after winter cover crop of Kale

*Food for Your Family and Food for Your Soil*

an excellent winter cover crop for your garden . . . .

BY planting a winter cover crop of Dwarf Siberian Kale—a vitamin-rich green leafy vegetable—you can supply a winter soil cover and concurrently supply your family with wholesome food. Thus you supply food for your family and your soil at the same time.
Dwarf Siberian Kale offers a host of values to the gardener, besides being a vitamin packed vegetable. It enriches the soil for future crops—prevents erosion—decreases leaching—protects sudden temperature changes in the ground—assists in holding moisture.

**ORDER** from Blake Farm Seeds. Obtainable in one, two, or five pound packages. Price—
**$1.00 per lb., postp'd.**
No shipments will be made this year after September 10. Send check or money order. (No stamps please.)

WHAT ABOUT KALE? — June, July, and August are best months to plant. Excellent companion for Winter Vetch. Best when seeded and grown heavily. Kale is a good subsoiler. One ounce of seed sows 200 feet of drill. Five pounds broadcasted should supply a good cover for one acre.

BLAKE FARM SEEDS
P. O. BOX 1601
CINCINNATI 1, OHIO

# WHICH DO YOU WANT?

Normal Elimination  Better Digestion  Restful Sleep
Strong Healthy Teeth  Continued Good Eyesight

THEN STOP THROWING AWAY PRECIOUS VITAMINS AND MINERALS IN YOUR FOOD

MAKE MEALS WITH A **VITA MIX**
Drink Your Way to Health!

**$29.95**

Look what VITA MIX does

Makes health drinks in 1 to 4 minutes, makes soup without boiling in 3 minutes, makes cake batter ready for oven in 3 minutes, chops whole grain into flour or cereal in 1 to 4 minutes, chops vegetable salads in 5 seconds. In preparing food the ordinary way, you peel off and throw away those vitamins and mineral-filled parts which are so essential to good health. With the Vita-Mix you keep ALL the natural health-giving food value. That's why you can literally drink your way to health with the Vita Mix. Completely liquefies, whips, chops, emulsifies all fruits and vegetables into tangy, appetizing drinks. Leaves no pulp. No cooking, juicing or peeling of rinds necessary. Now has new unbreakable stainless steel bowl. Easy to sterilize.

**GET 2 GIFTS** IF YOU ORDER WITHIN 15 DAYS

Natural Foods Institute
Dept. OG-5
Olmsted Falls, Ohio

I want to drink my way to health. Rush me your Vita Mix worth $39.95 plus your two free gifts, an electric grill and toaster worth $9.95 and the Recipe Book worth 55c. I enclose $29.95, a saving of $20.50.

NAME .....
ADDRESS .....
CITY ..... STATE .....

**ELECTRICAL GRILL & TOASTER** worth $ 9.95
Toasts perfectly two sandwiches at a time. Makes preparing meals lots easier.

**VITA MIRACLE RECIPE BOOK** worth .55
Shows you how to make 533 delicious dishes and drinks with your Vita Mix.

**VITA MIX** worth 39.95
**YOU PAY $29.95** **TOTAL VALUE $50.45**

# Earthworms

(Domesticated)

The Soil is now awakening from its Winter rest. It's starting production of food and flowers.

You can—instead of being a destroyer by use of artificials—help Nature in replacing the elements she has given up by composting waste materials such as leaves, grass-clippings, weeds, etc.

Earthworms play an integral part in converting waste into valuable manure. Have them help YOU to help Nature in providing for YOU and YOURS.

*400-500 Earthworms* $2.75

FREE BOOK—Leaves and what they do.
or Compost, how to make it.

*800-1000 Earthworms* $4.75

FREE BOOK—The Compost Gardener.
or Our friend the Earthworm.

*1200-1500 Earthworms* $6.75

FREE BOOK—Grow a Garden and be self-sufficient.

Full instructions with each order. All orders prepaid East of Mississippi River. Add 10% west thereof.

Send for free copy of recently written treatise on EARTHWORMS.

ORGANIC GARDENS
Fullerton, Maryland

PERENNIALS

Organically Grown
Our get acquainted selection

*10 Plants - All different* $3.00
List value over $4.00

*20 Plants - All different* $5.00
List value over $6.50

GLADIOLUS

A Select Mixture in Many Colors
Large Bulbs

50 - $2.50 100 - $4.00

All orders Post Paid

Send for complete list of Plants and Bulbs.

ORGANIC GARDENS
Fullerton, Maryland



# DRIED SEAWEED

FROM THE COAST OF MAINE

Our Seaweed is harvested, fresh from the rocks, dried, shredded and packed in bags to provide minerals from the sea for the benefit of your soil.

WRITE FOR PRICES TO

Seacoast Products Co.
EDGEWATER PARK, N. J.


where I can, and I'm a little like one fellow in a few issues of *Organic Gardening* back, "Oh, my aching back", but, oh, brother, the results it brings. Everything improves after rock mulching, but I must tell you of my English walnut tree. The former owner came back the other day and said, "Well, the walnut tree finally started to grow." He said that it practically stood still for three years. Well, compost and rocks plus one year and no one would realize it was the same tree. Every limb eight to ten feet longer, some leaves eight inches across and over a foot long, and walnuts. The finest I ever tasted.

Well, if you haven't quit reading this a long way back, may I say just one more thing? Thanks a million for coming into my life and for goodness sake keep up the good work. This sad old world needs you and the wonderful work you are doing.

Your pupil,
SAMUEL E. KING
Fallbrook, Calif.

Editor's Note: *Seaweed used for salt-sensitive plants should be washed with fresh water before being used.*

—o—

We have three earthworm farms in our family. Our advertising center is the Stow Earthworm Farm.

At our farm in New London, Ohio owned by my brother-in-law and sister, Mr. and Mrs. Doen Motter, we are seeing amazing results in composting, gardening and poultry raising.

By the Fourth of July, 1949 we had cut all the weeds and tall grass around the house and garden and heaped it onto our earthworm pits to a height of three feet. We also added some old chicken manure and cow manure and some dirt. By October, 1949 it was completely broken down into rich topsoil by the action of earthworms and soil bacteria. Kitchen and canning waste had been buried in it during the summer causing some additional aeration and turn over of compost.


# PREMIER makes soil *alive* gardens *thrive*

Copyr't 1950, P.P.M.C.

ROOTS grow stronger—plants grow lovelier—in soil conditioned by *Premier Peat Moss.*

*Fluffy* Premier adds *pure, weed-free, spongy, 97% organic matter* to your soil. It gives substance to light soil—loosens heavy soil—so that roots can spread out. Because of its amazing absorbency, it soaks up as much as *20 times its weight in moisture.* It enables all soil to store water, air and plant food—and release it as needed. Premier also acts as an "appetizer" to stimulate the feeding of roots and the growth of plants.

Give your soil Premier Peat Moss—and your soil will give you the strong-growing lawn and garden you want. Ask your dealer today for Premier Peat Moss—easily identified by the *blue* bale head with the Certified Seal.

PREMIER PEAT MOSS CORP.
535 Fifth Avenue
New York 17, N. Y.

PREMIER PEAT MOSS



*EXPERT* GARDEN DATA IN

Convenient File Form!

Sturdy dark green leatherette box. 4½"x5½"x8½" 150—3"x5" cards

Combine scientific gardening information with your planting and growing experience for a permanent record—always at your fingertips—in convenient file form.

COMPLETE RECORD

Each card gives facts of planting, culture, etc. on individual flowers, vegetables, shrubs or trees—reverse side is your convenient record space. Box is a handy place to file your clippings.

ORDER NOW!

Order your "GLANCE" gardening and record file TODAY! For personal use or as a gift. Shipped prepaid for only $4.95 if check or money order accompanies order. ORDER NOW—in time for seasonal planting.

GLANCE Dept. G-3 406 Elm St., Cincinnati 2, Ohio



# Clean Chimneys Permanently

Stops down draft—prevents furnace explosions. Satisfaction guaranteed. This copper pot (with character) Mailable. For free booklet address

WIG., ABINGTON, MASS.

SAVES FUEL

While we were harvesting earthworm castings (manure) from our pits during the summer and this fall, in preparation for new compost, Mrs. Motter put some of her share on the garden flowers and vegetables. The already beautiful and delectable compost grown plants out did themselves in making an ever better show throughout the summer and late fall.

Mr. Motter dumped his share of castings in the chicken yard where he keeps an earthworm pit just for chickens. The chickens scratched and ate castings (culture) though few, if any, worms remained in it after our screening process.

—o—

## SPOT PLANTING TOMATOES

I spot plant my tomatoes in a compost made of weeds, leaves, and any other plant residues that may be available at the time. As a rule this compost is about one year old. My spotting bed is seven feet wide and twenty-one feet long. In this I plant fourteen plants. As soon as the plants are set in holes filled with the compost, the entire bed is covered with a plant mulch one foot or more in thickness. The plants are then staked.

Last year I had no weeds, no diseases, no insects, and the largest tomatoes I ever saw. I used no spray, and did not cultivate as the soil was thickly covered with mulch.

I also grew tomatoes in a field after a cover crop of rye had been ploughed down, and the soil fertilized with bonemeal. But my tomatoes blighted just the same.*

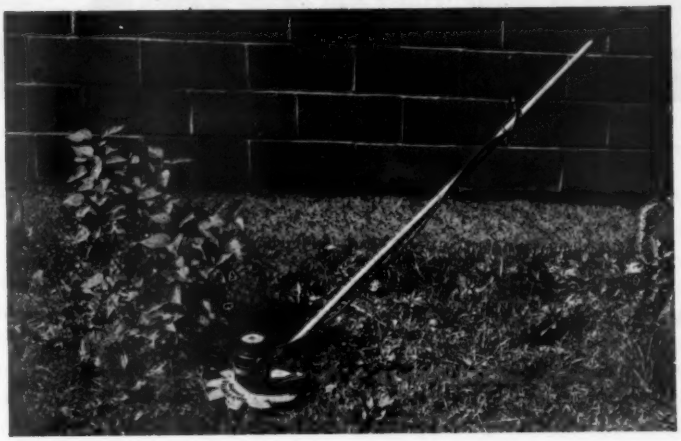
When I occupied this place seven years ago, the wind blew my seeds as fast as I planted them. The soil seemed to be almost pure sand. Now it is mellow and springy, and anything will grow in it.

G. Ernest Widmann,
R. D. No. 1, Vincetown, N. J.

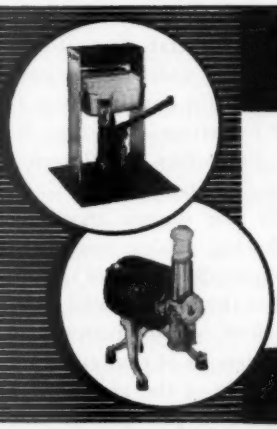
*Editor's Note: *The soil in the field doubtless is deficient in one or more elements which are essential to the normal, healthy growth of the tomato plants.*


**BEAUTIFY YOUR LAWN - NO DRUDGERY**

FOR TRIMMING AROUND SHRUBBERY, TREES, FLOWER BEDS AND HEDGES..FOR TRIMMING EDGES OF WALKS AND DRIVEWAYS..FOR CUTTING ALONG SIDES OF BUILDINGS, WALKS AND FENCES.



TRIMMER CAN BE OPERATED FROM A.C. or D.C. 110 VOLT CURRENT
**SATISFACTION GUARANTEED**
$38.95 POSTAGE PAID - CHECK or MONEY ORDER
HOFFMAN LAWN SUPPLY CO.
**Distributors of: LAWNCRAFT GRASS TRIMMERS, HEDGE CLIPPERS, ROTARY and REEL TYPE POWER LAWNMOWERS.**
P. O. BOX 153 HOFFMAN, ILL.



**GET MORE JUICE!**
**GET FINER SHREDDING!**
*...and Save Money!*

- Regardless of your needs, K & K Juicer functions economically and swiftly, to give you as much as 20% more juice than you've ever gotten before! Simply because of the 3000 lbs. pressure delivered by K & K's easy-to-use hydraulic system. And, what's important, because of the method of extracting juice, the K & K Juicer doesn't destroy the enzymes, so important for aiding digestion.
- The K & K Shredder is a wonderful companion with its quick and efficient shredding of fruits and vegetables for soups, salads and desserts.
- Both economically priced, they return their value in more juice and finer shredding . . . paying off in more and better food!

*Address inquiries to:*
KNUTH ENGINEERING COMPANY
2617 N. ST. LOUIS AVE., CHICAGO 47, ILLINOIS

**Kill Moles**
WITH A
**NASH TRAP**

The safe, sure way. Can't poison soil. Saves your earthworms. Used by all informed mole control specialists. At dealers, or direct, $2.50 postpaid. C.O.D. fees extra. FREE—Mole control pamphlet. Nash Mole Traps, 164 E. South, Kalamazoo, Michigan.
**NASH Choker Loop TRAPS**

**TUG-O-WHEEL**
COMPLETE GARDENING OUTFIT
MAKES GARDENING EASY!
Thousands of satisfied users

IDEAL for VEGETABLE GARDENS
No more hard spading! You too can have fine gardens, with less time, less effort (do 10 hrs. work in 1). "TUG-O-WHEEL" does it—all steel outfit plows 5" deep; marks rows 12" to 36" wide; hills, cultivates, destroys weeds; fast, quick, easy; quality fully guaranteed. Free folder tells all. Write
TUG-O-WHEEL HAND PLOW CO.
Dept. O Ballston Spa, New York

# THE NEW ORGANIC METHOD

[Part XIII—Mr. Rodale's Cancer Series appears on page 40 of this issue.]

AS THIS is being written we are about to begin operations for the 1950 season on our farm and in our garden and the prospect of experimenting with the new organic method is fascinating. In a few weeks we will be putting the first seed into the vegetable garden, and still are not sure what we are going to do with the mulch which has been lying upon it since last October. We will wait to the very last moment, checking upon the condition of the mulch and the softness of the ground underneath.

It is possible that we may remove the entire mulch, plow the ground shallowly, plant, and gradually bring back the mulch, and add more mulch material to it as the plants grow. In a few years time, if we plow under the mulch at the end of each season and apply a new mulch cover for over winter, the ground may become so soft that it will no longer be necessary to plow. It is also possible that we may plow under or disc in the present mulch, in a few weeks from now. It all depends what our analysis shows at that time.

Each month the new method seems to stand out in perspective a little more clearly, to suggest refinements, to develop itself more and more. As I see it, the first and most important rule is not to plant too soon after digging in or plowing under raw organic matter. For this reason it is best to start by using such raw material as a mulch and then to dig it in at the end of the season when the ground, resting over the winter, will have an opportunity to absorb it, especially if after this is done a new heavy mulch is kept on the surface during the winter, to warm the dug-in organic matter. After three or four years of such practice what a change will come about in the darkness and the softness of the soil!

## CONNECTICUT EXPERIMENTAL WORK

While on the subject of the danger of planting directly on raw organic matter, some work along these lines was done at the Connecticut Agricultural Experimental Station (New Haven, Conn.) which was described in their Bulletin entitled *Crop Residues as Causative Agents of Root Rots of Vegetables* by Vincent W. Cochrane, (January 1949).

Usually the danger that comes from plowing under raw organic matter, especially if it is low in nitrogen, is that the bacteria which break it down feed on soil nitrogen and cause deficiencies of that element, to the detriment of the growing crop. This is not so pronounced where nitrogenous plant matter is plowed under, such as legumes—soybeans, alfalfa, etc. But in this experimental project at Connecticut it was discovered that aside from nitrogen or other deficiencies, certain toxic effects of the raw matter were noticed.

## QUOTING FROM BULLETIN

Let me quote from the bulletin:

"The experimental evidence presented supports the hypothesis that certain plant residues cause an increase in root rot and a decrease in yield of succeeding crops. The effect is not explicable on the basis of nutrient starvation nor on the grounds of simple pathogenesis by a nematode or microorganism. Rather, the data permit the conclusion that plant residues in the soil exert a direct toxic effect on the roots of susceptible plants, probably complicated by the action of secondary rot-producing microoganisms.

"In the greenhouse, addition of corn stover to soil caused root rot in lettuce transplants and a concomitant lowering of growth. Residues allowed to decompose for 30 days at high temperature and moisture were no longer injurious."

Note the 30 day period was in the high heat of a greenhouse. Where raw organic matter is put in the soil in the open, a period of at least two months should elapse before anything is planted. Had the corn stover been applied as a mulch on top of the soil rather than *in* the soil there would not have been any toxic effects.

Let me quote further from this bulletin:

"In field experiments head lettuce after sweet corn and vetch was severely injured, the damage appearing both in root rot observations and as decreases in yield. As high as 60 per cent of the root area was discolored, and the diminution in yield (fresh weight) was as high as 40 per cent.

"Leaf lettuce after a previous crop of clover was similarly affected, when compared to the same crop after soybean (and weeds). Root rot attributable to the clover residues reached an average level of 19.5 per cent, as compared to 10.5 per cent after soybean. The average plant weight of lettuce after clover was about two-thirds of that in the soybean controls.

"A previous cropping with corn and vetch increased pink root of onion slightly but significantly, while having no significant effect on yield.

"Head lettuce was also affected by timothy residues: root rot ranged as high as 60 per cent, and the average plant weight was about 67 per cent of that following soybean.

"In an early-season harvest, spinach root rot was increased by timothy residues, but in a later harvest there was no difference between timothy and soybean plots. Yield was not affected.

"Timothy residues similarly caused a small but significant increase in root browning of potato in an early-season harvest. The effect was not significant at later harvests.

"Fertilization with supplemental nitrogen or superphosphate had no influence on the previous crop effect. It is, therefore, concluded that the mechanism of injury is not merely an unavailability of nitrogen or phosphorus.

"The observed injurious effect of certain crop residues is in no way an argument against the principle that an adequate level of organic matter should be maintained in the soil. The results do, however, raise the question of the kind of organic matter to be applied and the time of such application. For any given soil type and locality there are some crops which will be depressed in growth and will have a high level of root rot when they are planted in soil containing undecomposed or only partially decomposed residues of other crops."

Again let me remind you that if these organic matter residues are given sufficient time in which to decay in the soil, the toxic qualities will have become dissipated. An extensive amount of research has been done in this field.

## GROUND UP SEEDS

Incidentally I might mention that in our recommendation of the use of ground up seeds as fertilizers it is important not to dig them in and plant immediately on them. I have been told of cases where the digging in of raw ground soybeans killed out certain flowering shrubs. It is better to mix such ground seed with other compostible materials and apply it as a mulch on the surface of the ground. The same thing applies in flats where seedlings are growing. Only well-finished compost should be used here. This is where a good use can be found for table garbage. It should not be used as a mulch under any circumstances, but should be composted. Applying raw organic matter in seed flats will cause damping off.

## ROSE METHOD

I met a professional flower grower recently who runs a nursery and who claims to get excellent results with rose bushes by the following method:

One gallon of peat moss.
Two gallons of compost.
One quart of soybean meal, well mixed together.

He throws about three to four handfuls of this mixture under each tree, as a mulch.

The following is a short item from the winter (1949) issue of *Mother Earth*, published by the Soil Association in England, which throws additional light on mulches:

## NEW LIGHT ON MULCHING

G. Ingham (Pretoria)

*Copy of letter published in "The New Rhodesia," August 5, 1949*

"I was much interested in the article in the issue of June 17 by Capt. J. M. Moubray, and particularly in his observation that tomatoes growing on soil mulched with grass or hay send up roots from the soil into the mulch, and it was inferred that they must be receiving substantial amounts of plant food from that source. Capt. Moubray may be interested to know that I have been making a special study of this question for the last two years, and it has yielded important results.

"A one-inch mulch of cellulosic materials, such as dried grass, sawdust, fibres of sisal, jute, etc., were experimented with, and pure cellulose was included to act as a control. These mulches were put, not on the soil, but on porcelain dishes with perforated bottoms so that after watering with distilled water, the filtrate which percolated through could be collected and analyzed. In each case distilled water corresponding to one inch of rain was added and analyses were made at weekly intervals, the mulch being dried after each leaching to prevent bacterial action.

"The results were remarkable and fully explain why the roots of tomato plants, according to Capt. Moubray's observation, were waiting with open mouths just below the mulch, because the water-soluble salts, which percolated through, consisted of ammonia, nitrates, lime, phosphoric oxide and potash in amounts which, calculated as pounds per acre per annum on a rainfall of 30 inches, would be sufficient for at least an ordinary crop.

"It is important to note that these additions of plant food contained in the drainage water were not the decomposition products of the several mulches (which, being dried, would not permit the functioning of the bacteria which were doubtless present), and the mulches remained intact at the end of the experiments with very little loss, and could con-

tinue to function week by week almost indefinitely.

"In contrast to this method of using mulches (like humus) as a sort of permanent fertilizer, is the practice of green manuring. In this case the organic matter is ploughed into the soil, where it is quickly decomposed by bacterial action. It is true that it confers some benefit on the soil in the shape of available plant food, but in any case it can function only once and has to be renewed from year to year.

"The moral of all this is that organic cellulosic materials, and especially those which are highly resistant to bacterial attack, should be applied as mulches on the surface of the soil."

ADVANTAGE OF MULCHING

There is much evidence that seems to indicate that keeping a good mulch on a garden has many advantages. It conserves the moisture, prevents weeds from growing, keeps the hot sun from baking the ground and killing surface bacteria and fungi, keeps the soil under the mulch warmer in winter and cooler in summer, etc. Here is an extremely important advantage. When you do not mulch, but have to keep cultivating the soil to exterminate weeds, such continual stirrings of the soil increases its biological oxidation. It also cuts lateral roots that grow near the surface.

There is the problem of mulching in dry climates. Where irrigation is in use, less irrigation water would be needed if the surface is clothed with an absorbent mulch. Since we announced the new method in the December, 1949 issue, there may have been some applications of it below the Mason Dixon Line, and in dry regions of the West. Will readers who have had some experience with it write in and tell us. I can see one wonderful advantage of mulching. After a heavy rain, you can walk right into your garden to pick vegetables without fear of sinking to your ankles in mud.

end

# Mr. Oka Makes a Lawn and Paving Stones

By JULIE BEDIER

THE old Japanese gardener had learned his craft from his father, who had it from a long line of gardening ancestors. Each generation had added a little to the store of gardening artistry, and when Mr. Oka came to America, he not only brought this precious inheritance with him but kept an eye open for anything new. When he discovered *Organic Gardening Magazine,* he immediately recognized the soundness of the practices it advocates. With a dog-eared copy of *Compost and How to Make It* protruding from his hip pocket, he soon built up a long compost heap in a shady corner of the grounds where he was employed. He followed directions to the letter, took the temperature of his compost heap with a doctor's solicitude, watered it and turned it over fondly. He also extracted angle worms from it to go fishing with on Sunday afternoons.

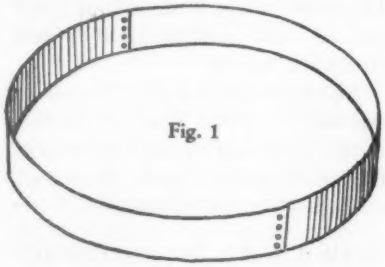


Fig. 1

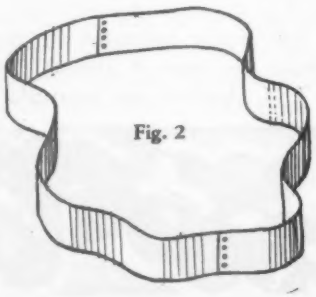


Fig. 2

The owners of the estate were anxious to have a considerable portion of neglected land cleared of briers and made into lawns, and this Mr. Oka set out to do. As soon as a conveniently sized section was cleared, leveled and rolled firm, the old gardener planted it to lawn, continuing throughout the spring and summer. This is how he did it:

He rigged up a sieve near his compost pile, and there, working busily with fork and spade, sifted the soft black material through the wire mesh. As soon as he had a heap of sifted compost sufficient for the day's needs, he mixed his lawn grass seed into it then and there, forking through the pile with the greatest care, in order to obtain an even mixture. Then he wheeled it off to the place which was ready for planting. Working first with wheelbarrow and scoop shovel, he distributed the mixture of compost and seed over the area. Then he used an ordinary straw broom to even it up until the whole surface was covered to about a quarter of an inch.

If the weather happened to be dry, he sprinkled the whole with a hose. During rainy weather, he watched and smiled instead. Incredibly, the grass sprung up with sudden swiftness and immediately began to look like fine old well-kept velvety lawn. Hot sun and dry weather had no effect on the new greensward, for the spongy layer of compost in which it was rooted kept the soil moisture from evaporating.

Part of Mr. Oka's scheme called for a flagstone walk and terrace. These he constructed while he was making the lawns. After the earth was cleared and leveled but before it was sowed, he marked off the

places for the path and terrace, using stakes and cord. He had obtained several sheets of pliable sheet metal. These he cut into strips about four inches wide, with a length of ten feet or more. He bent the strips around into circles, fastening the two ends of each together. Then he set these strips on edge in the soil where path and terrace were marked out. He did not leave the circles as they were, but bent them into irregular forms, like the flat stones of crazy paving. As he pressed the sharp edges of the metal down two or more inches into the soil, the shapes held. He arranged these metal moulds to cover path and terrace, leaving an inch or two of space between metal rim and metal rim. Then Mr. Oka poured his concrete. He made his concrete very hard, using half cement and half sand. He divided it into several portions, coloring one batch brown, one terra cotta, one dull green and one grey. Into the metal forms he poured his mixtures, taking care to place "stones" of different colors in harmonious groupings. He never poured more than he could handle at once, and took care to leave space, so that he could reach all parts of his work from one side or another.

The concrete takes about four hours to harden. Therefore, when it was half hard, about two hours after pouring, he went to work on his "stones." Removing the metal rims carefully, he began to form and model the concrete with a trowel. Edges were beveled off, smoothed, sometimes made more irregular, to look like natural stone. Soon he had a handsome walk and terrace of crazy paving stones in dull, harmonious colors, restful to the eye and interesting in variety.

After several days, when all the sections were poured and hardened, Mr. Oka gave the final touch. A wheelbarrow load of the sifted compost and grass seed was shoveled out on to walk and terrace. Then with a straw broom the old gardener swept the mixture into the crevices which he had left between his paving stones. When the cracks were full and smoothed he gave all a gentle sprinkling with the hose. In a few days the grass was growing green and thick between the stones. Path and terrace seemed to be ancient, settled, part of an old, old garden. So did the lawn. No one could have guessed that sumac and wild blackberries had recently held the place all their own.

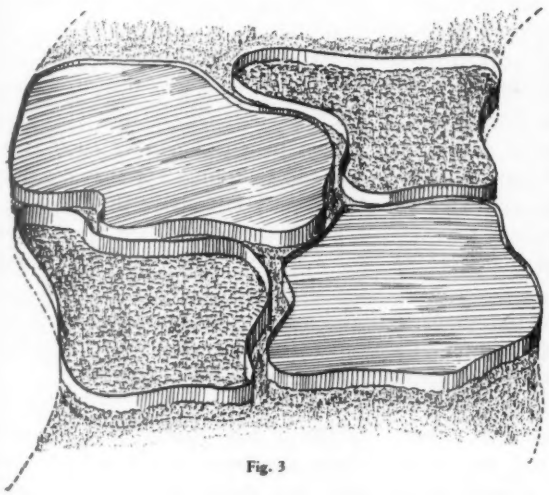


Fig. 3

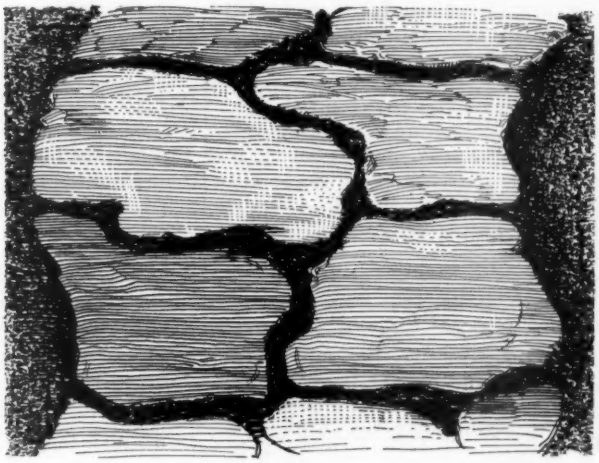


Fig. 4

# The Soil And Health Foundation

The Soil and Health Foundation has been organized and incorporated in the Courts of the State of Pennsylvania for the following general purposes:

(a) To promote, foster and encourage the use of humus and other organic matter in order to maintain and improve soil fertility, to prevent soil erosion, and to improve the health of man.

(b) To conduct, engage in, foster and encourage scientific research and study and teaching, training, informing and educating the public on and concerning the soil, foods and health of man—and their relation to each other.

(c) To study the effects of organic and artificial fertilizers on soil, plants, animals and man.

(d) In order to accomplish the foregoing purposes to establish, use, maintain and operate farms, schools, laboratories, experimental stations, publishing houses and all other appropriate agencies, means and instrumentalities.

The formation of the SOIL AND HEALTH FOUNDATION stems directly from the work of Sir Albert Howard, who over a period of more than thirty years proved that the use of artificial, chemical fertilizers was producing food with lower vitamin and nutritional content than foods produced in soils where organic matter in the forms of animal manures, weeds, leaves and other green matter made into composts enriched the ground. There is sufficient evidence to show that such practices caused less soil erosion and resulted in better health for man and beast.

Through its publications, the Foundation will publicize the results of its investigations and endeavor to educate farmers, gardeners, and the public in general in cultural practices which will insure the better conservation of our soils and the public health.

All who make contributions to this Foundation become members, regardless of the amount given. A contribution continues the membership for a year. Will all members who have not done so, send their contributions for another year to the Secretary, Soil and Health Foundation, Emmaus, Pa.

# MEN OF ORGANIC FARMING

## LADY EVE BALFOUR

by JORIAN E. F. JENKS

IT IS fitting that the author of *The Living Soil* should be one whose own life has always been bound up with the land. Lady Eve Balfour comes, on her father's side, of a long line of Scottish Lairds, on her mother's side, of an East Anglian land-owning family. She herself was brought up in the country, spending six months of each year on the Scottish estate of her celebrated uncle, the late Honourable A. J. Balfour.

To "A. J.", as well as to her father, she doubtless owes her talent for scientific enquiry, her capacity to grasp the decisive aspects of any evidence, her ability to debate a topic enthusiastically and exhaustively, yet without prejudice or rancour. But essentially her own are the lurking sense of humour, the overwhelming sincerity, the direct and utterly unaffected manner, which captivate her innumerable friends and disarm the most bigoted opponent.

Her own too was the all-important decision to become a farmer. It was a sudden urge that came to her one day when, at the age of 12, she was riding her pony across the Lammermuir Hills in southern Scotland. Breasting a rise that suddenly gave her a wide view over the Firth of Forth, she was seized with a conviction that farming was the only kind of life that would satisfy her. Today, more than three decades later, that conviction is as strong as ever. Whatever fame she has achieved, as a writer, as an organizer, as a scientific investigator, it is as a farmer that she likes best to be known.

In 1915-17, she took a two-year course in agriculture at Reading University College, at that time one of the few academic institutions able to provide such training for women. Her diploma won, she felt that the most effective way in which she could help her country . . then (1917) in grave danger of starvation through the German submarine campaign . . . . was to make a direct contribution to food production. Accordingly, she worked for a year on the 1,000-acre sewage farm run by the Reading Corporation. Though the hours were never less than from 6 a.m. to 6 p.m., and she had a three-mile cycle ride at each end of the day, she declares that this was one of the happiest periods of her life.

The next step was the management of a small farm in Monmouthshire used for the training of Land Army girls, an interesting experience which taught her much. Then, the war over, she and her sister Mary began to look around for a place of their own. Those who have encountered the Balfour love of independence will hardly need to be told that an offer of a farm on one of the family estates was firmly rejected. The farming venture would prosper or fail under its own steam.

It was, however, to Sussex that their enquiries were first directed. And it was only because the land-agent, as land-agents will, sent them a sheaf of particulars about farms elsewhere that they heard of the existence of Haughley, in the heart of Suffolk. But the description of New Bells farm so charmed them that Sussex was deserted forthwith and negotiations for the Suffolk place were opened.

Owing to the big railway strike then in progress, these had perforce to be conducted by telegraph, while the journey to view the scene of their future labours had to be made in part by cob and gig. Lady Eve recounts with gusto the adventures of the trek, including a night spent in a town so crammed with troops that the only accommodation to be found was a derelict stable. Packets of porridge oats were bought for the cob's supper, cheese and chocolate (eaten in a cinema) for their own, and the Balfours slept that night in the rickety loft above the cob. Nor was this the end of their adventures, for a few months later their young brother (now the Earl of Balfour), who was helping them move in some cattle, had a motor-cycle accident which nearly proved fatal.

This seems to be the point at which a few words may be said about the farm to which Lady Eve and her sister were so attracted and which bids fair to acquire historic significance as the research centre of the organic movement.

Not that New Bells lacked historic background before Lady Eve made it her headquarters. Its antecedents go back far beyond the Norman Conquest; for the deep moat, which encircles 1½ acres of land, was dug by Saxon settlers as a protection from Danish raids, probably in the 8th century. Nor were Danes the only hazards of those far-off days, for the old records show that the enclosure was used regularly as a night-fold for the cattle of Haughley Castle as a safeguard against the

wolves that then roamed the immense oak-forests of this part of Suffolk.

Of these forests there is a notable survivor in the shape of the New Bells Oak—a riven but still hearty giant of a thousand years or more, just across the way from a barn which is a mere six hundred. Lady Eve relates how one day she found two young New Zealanders wandering round the farm. Their grandfather, who had migrated in the 1880's, had often spoken of his English birthplace, but all that they could remember was that it was a Suffolk farm with a famous old oak. A little research soon established the fact that they had indeed found their way back to their ancestral home.

The oak-beamed and plastered farmhouse looks exactly as if, like the oak, it still had deep roots in the ground whence it sprang.

Yet it is a comparatively modern building. For it was not until 1450 that Bell, a solid yeoman with a right to run 100 hogs in the forest, began its erection. To distinguish it from his father's homestead nearby, it became known as Young Bell's, and Young Bell's it remained until some 100 years ago, when for some unknown reason it became New Bells.

The farm, together with the adjoining Walnut Tree Manor farm, extends to nearly 250 acres. All of it lies on the stiff clay loam which is so stubborn and awkward to work in a difficult season—highly esteemed as wheat and bean land for centuries, but hard to run without loss in modern times when cheap grain was pouring in from abroad. New Bells in fact, was exactly the type of place which farmers learned to shun in the depression—too small to mechanize, too large to be worked with family labour, in too dry a climate to grass down easily. Yet Lady Eve and her sister bought and stocked it at the high prices of 1920, just before the deflationary slump, and by incredibly hard work and every conceivable shift managed to keep it going through the black years when all over England farmers were going bankrupt and good husbandry was at a discount.

Keeping as much land as possible under the plough, they built up a herd of pedigree Dairy Shorthorns for the production of Grade A milk, and defeated the pick of the country's herds (many of them tuberculin tested) in a clean milk competition. New Bells milk became noted among the medical fraternity of the County town of Ipswich as *the* prescription for weakly children. But eventually the task of distributing small quantities over a wide area became too great for the limited Balfour resources and was handed over to others. The dairy herd was replaced by a large breeding herd of Essex pigs (similar in type and markings to the Hampshire), which are the traditional livestock of the district. Vegetables were also grown on a considerable scale.

## MEN OF ORGANIC FARMING

***This is the third of a series of articles devoted to leaders in the field of Organic Farming and Gardening. Lady Eve Balfour is Organizing Secretary of The Soil Association, Limited, author of The Living Soil, and a dynamic leader in the whole field of organiculture.***

In 1935 there came into Lady Eve's life someone who was destined to influence its whole future course. Miss Alice Debenham, sister of a successful London business man who became one of the largest landowners in Dorset, had been one of the first women medical students. But her own health broke down, and under doctor's orders she turned to an open-air career, managing some of her brother's farms as well as property of her own in Suffolk. Tragically, she developed later the rheumatoid arthritis which rendered her a cripple for the rest of her life.

At this time Walnut Tree Manor farmhouse was standing derelict. Miss Debenham first rented and then bought it from the Balfours, who continued to farm the land attached to it. The house, reconditioned and provided with a large garden by Miss Debenham, now serves admirably as a hostel for staff, students and visitors to New Bells.

It was not long before Lady Eve found in Miss Debenham a firm friends with similar tastes and a mind as keen as her own. From their common fund of farming and medical knowledge, they gradually evolved a scheme of research which would relate the two. As a preliminary, they wrote a pamphlet in collaboration with Dr. Lionel Picton, well-known as the honorary secretary and chief spokesman of the Cheshire Medical and Panel Committees, whose "Medical Testament," first published in 1939, remains one of the great landmarks of the modern movement for positive health.

Lady Eve attributes her first interest in soil fertility and its influence on human well-being to Viscount Lymington's (now Lord Portsmouth) book *Famine in England,* published in 1938. The impression it made on her was electrifying. "From that moment," she says, "I realized as if I had always known it sub-consciously, that however difficult of accomplishment, all life was a phenomenon that must be looked at as a whole." This realization was soon confirmed by study of Lord Northbourne's *Look to the Land* and Dr. G. T. Wrench's *Wheel of Health.* Then came a meeting with Sir Albert Howard and more reading, notably "The Medical Testament," and, later, Sir Albert's own *Agricultural Testament.*

But she did not by any means confine herself to reading. She taught herself how to make compost and began to experiment with her own diet. She was, she says, "staggered by the results." As she adopted compost-grown foods, so the rheumatism to which she had been much addict-

ed, became a thing of the past, and even head colds a rarity. Miss Kathleen Carnley, who has lived at New Bells and has known Lady Eve for many years, relates how a whole armoury of medicines and patent remedies was at this stage swept into the dust-bin, never to be replaced.

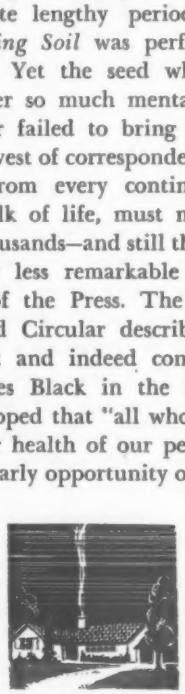
Elementary but eminently practical tests with cats and pigs now reinforced Lady Eve's conviction that the clue to health must be sought in the soil. But the greater became the volume of evidence, the more apparent did it become both to her and (while she lived) Miss Debenham that there were gaps in it. These, they felt, could be closed and the skeptics convinced, only by long-term experiments in which organic and inorganic methods could be compared side by side under conditions as nearly as possible identical.

This was the origin in 1938 of the Haughley Research Trust, and the division of the farms into two (later three) sections, so that the cumulative effects of different soil treatments could be put to a thorough test. Plans for issuing a public appeal for research funds were well advanced when war came. All that could be done then was to form a holding company, the Haughley Research Farms Ltd., to farm the land for the time being and, as far as was practicable in the face of emergency cropping regulations, prepare it for future experiments. At this point came the untimely death of Miss Debenham, who bequeathed Walnut Tree and a small financial endowment to the Trust.

But though the development of this project had to be suspended while all agricultural resources were devoted to food production, Lady Eve had no mind to put her ideas in cold storage. In addition to her farm work and Civil Defence duties (Suffolk was part of the "Invasion Coast") she made time (mostly at night) for the collection, sifting and assembly of the mass of material which was published in 1943 as *The Living Soil*. It was the first serious attempt—which is still unchallenged as a clear and comprehensive survey—to bring together the medical and the agricultural evidence that health is essentially wholeness and is to be sought primarily in the cultivation of biological—and in particular ecological—function.

The reception accorded the book astonished its author as much as it did her publishers. It demonstrated far more clearly than any Gallop Poll could have done that all over the world, often by quite different sets of experiences, men and women were groping their way towards this new approach to life and were eager to learn more about it. Owing to the paper shortage, there have been quite lengthy periods when *The Living Soil* was perforce out of print. Yet the seed which was sown after so much mental travail has never failed to bring forth its daily harvest of correspondence. The letters, from every continent and every walk of life, must now total many thousands—and still they come.

Hardly less remarkable was the tribute of the Press. The Medical Press and Circular described it as "brilliant and indeed convincing." Dr. James Black in the *Christian World* hoped that "all who care for the eager health of our people will take an early opportunity of reading



this book." A *Punch* reviewer said it was a "supremely important as well as a biologically fascinating book." The *Times Literary Supplement* referred to it as "more than an exposition of doctrine, it is a demand for the recognition of the importance of the biological factor in soil fertility. The case is clearly stated and the arguments orderly." Mr. H. J. Massingham in *Time and Tide* and Sir George Stapledon in the *New English Weekly* were whole-heartedly enthusiastic. Farming and gardening papers, and the provincial and overseas press, were equally ready to pay tribute to a remarkable piece of work.

Since most readers will already be familiar with *The Living Soil*, it only remains to add that every penny of the substantial profits it has earned for the author have been spent on the farms, even when she herself was living on only 1 pound a week as their manager.

Naturally, contacts were widened in all directions, and as the war drew to a close new opportunities presented themselves. It was not long before Lady Eve and her friends found themselves exchanging knowledge with the doctors (George Scott Williamson and Innes Pearse), responsible for the important work being done by the Pioneer Health Centre at Peckham in south London. Contacts followed with other members of the medical professions who had been seized with a growing conviction that health must be studied and cultivated positively, as an expression of vitality and wholeness. Dentists, too, were directly interested, for few things have been more striking than the decay of teeth under modern living conditions.

Out of these contacts came in turn an important meeting in London on June 12th, 1945, of leading representatives of what was now coming to be known as the organic movement. There were 110 persons present, of whom the vast majority declared themselves enthusiastically in favour of establishing a federative body to undertake the enlargement and propagation of knowledge in the related fields of soil fertility and health. £1,600 were subscribed on the spot for this purpose. There followed a period of careful thought and planning, at the end of which (May 1946) emerged the Soil Association.

This is the only body in Britain—and one of the first in the world—to be devoted to the furtherance of research into the biological aspects of soil fertility, and to the dissemination of knowledge on the subject. It

is, moreover, supported and controlled entirely by its members without State or commercial patronage. Its first President, elected unanimously, was Lady Eve Balfour.

Even in its first year, the Association accomplished much. It brought together hundreds of isolated individuals and a number of groups, gave them a common platform and objective, and launched an important publicity campaign. It published two introductory booklets, a number of pamphlets and the first issue of its quarterly Journal.

It soon became clear, however, that the Association could not continue indefinitely to work from a London office. Its Honorary Secretary, Mr. Donald Wilson, could no longer be spared from his responsibilities as Manager of the Pioneer Health Centre, then re-opening after the war. Clearly the ideal base, both for organization and research was Haughley; and the ideal person to take charge of it was Lady Eve herself. In the winter of 1946 the move was made, Haughley becoming the Association Headquarters and Lady Eve Organizing Secretary, while Lord Teviot, a member of the group of Peers which has initiated several important debates in the House of Lords on the subjects of national health and agriculture, agreed to become President.

New Bells and Walnut Tree Manor farms are admirably adapted for long-term field experiments of the kind which Lady Eve and Miss Debenham envisaged ten years ago and which the Soil Association now seeks to carry forward a further stage. Its fields are level and of a convenient size, each divided from its neighbours by the deep ditches which are so necessary for drainage on this type of land. The history of each for many years has been carefully recorded, and their management has been directed to the end in view. That is, some of them have for the last seven years had only organically-made compost, while there is now a third which has received farmyard manure supplemented by chemicals in accordance with the customary farming practice. Under Lady Eve's direction, too, soil types have been studied and cropping planned so that whatever natural differences there may be are shared as equally as possible between the three sections; that is, in any given year the same crop continues a field in each section, all three fields being of the same soil type.

Already certain differences in soil texture and in the susceptibility of crops to adverse weather conditions, are becoming apparent, and there are indications that the organic compost section is beginning to draw ahead. But no definite conclusions can yet be drawn. The real test lies ahead, when the produce of the different sections is fed to livestock and laboratory animals for several generations. It is for this stage of the work — which clearly involves considerable outlay — that the Soil Association is appealing to the public for funds.

And so, on the spot where *The Living Soil* was written, the Soil Association is taking root. The Suffolk fields wherein its author learned the wisdom of the land are to be the scene of what may well prove one of the most decisive events in the history of agriculture—the integration of the sciences of soil, plant and animal nutrition. The influence of the new knowledge on the future of the human race can hardly fail to be far-reaching.

end

Ewing Galloway

# INSECTS ARE THEIR MEAT

## THE FLYCATCHERS KEEP INSECTS UNDER CONTROL

By CHARLES E. BOOTH
Illustrations by the Author

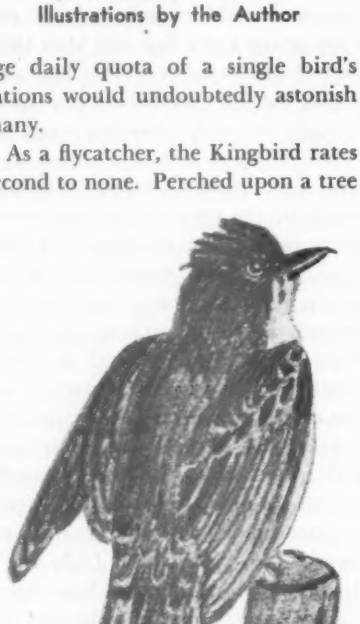
INSECTS are responsible for millions of dollars worth of damage to crops annually in the United States. This statement, incredible as it may seem, is based upon scientific fact.

Each year, farmers all over the country are faced with the problem of insect control. A better understanding and appreciation of the habits of our insectivorous birds would prove to be of essential value in coping with this serious problem. The protection and encouragement of these birds would accomplish much in the everlasting war against insects.

Although most of our native birds can be credited with the destruction of insects, none can be considered better friends of the farmer than the Tyrant Flycatchers. These truly American flycatchers are represented by thirty species and sub-species in the United States. None of them wear gaudy colors, and because of their drab plumage, they blend in with their surroundings, thus rendering them inconspicuous. While it is true of some of the larger species that they may eat some honey bees and predatory insects, the percentage is not high and cannot be held against them. Most of the honey bees taken are drones or males and it's a well known fact that every hive has a superfluity of these. Of the parasitic flies eaten, many of the flies themselves destroy smaller useful insects; thus a good example of the balance of nature exists in this case.

The common members of the flycatcher family are found from early spring until autumn in orchards, gardens, nurseries, and in the fields and deep woods. Their gigantic task of maintaining an equal balance among the insects is little noticed by the casual observer and the average daily quota of a single bird's rations would undoubtedly astonish many.

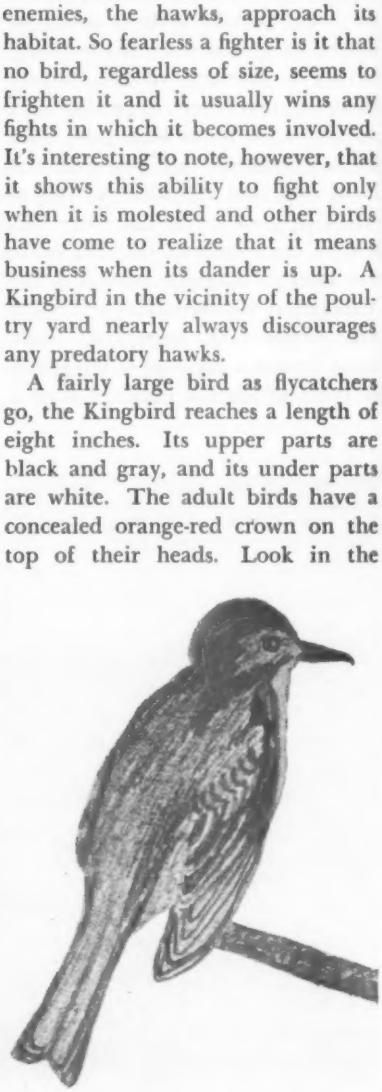
As a flycatcher, the Kingbird rates second to none. Perched upon a tree



or some other vantage point, it will wait patiently until some insect crosses its line of vision and then, quick as a flash, it will leave its perch, snap up the insect, and return to its perch, only to repeat the process within seconds. The name of "bee-martin" which is given to this bird is erroneous and here we have the question of the destruction of honey bees. To prove that this species is not guilty of this crime, six hundred and thirty-four stomachs were examined. Only sixty-one bees were found in twenty-two stomachs, and of these, fifty-one of them were useless drones.

According to the United States Bureau of Biological Survey, insects, most of them of the harmful type, form eighty-five per cent of the Kingbird's food. It does a good turn for the bee-keeper by eating robber-flies which attack and destroy honey bees. As if this fact were not enough to warrant its protection, the Kingbird is also a guardian of the poultry yard. It displays a remarkable degree of courage whenever its natural enemies, the hawks, approach its habitat. So fearless a fighter is it that no bird, regardless of size, seems to frighten it and it usually wins any fights in which it becomes involved. It's interesting to note, however, that it shows this ability to fight only when it is molested and other birds have come to realize that it means business when its dander is up. A Kingbird in the vicinity of the poultry yard nearly always discourages any predatory hawks.

A fairly large bird as flycatchers go, the Kingbird reaches a length of eight inches. Its upper parts are black and gray, and its under parts are white. The adult birds have a concealed orange-red crown on the top of their heads. Look in the



orchard or near the banks of a brook or a lake for its nest, and above all, protect it with every effort. The Kingbird is found in the eastern United States; southward to central Texas, Florida, and New Mexico.

In the eastern part of the United States and westward through the Gulf states to Texas, a slightly larger flycatcher, the Crested flycatcher, which measures eight and one-half inches, is found. Its general color is olive above and gray and yellow below. Although its distribution covers a large amount of territory, it is not considered as common as the other species. From an economical standpoint, the Crested flycatcher is a most welcome bird. Its food consists of ninety-four per cent animal matter and six per cent vegetable matter. Of the insects listed within its diet, grasshoppers, crickets, and katydids are among its favorites and over twenty-one per cent of its daily rations are moths and moth larvae. Included also are stinkbugs, treehoppers, assassin bugs, cotton boll-weevils, strawberry weevils, plum curculios, and various beetles. Moth caterpillars are eaten in preference to the adult moths. Since this valuable bird does not attack cultivated crops, it most certainly should be encouraged to nest near the farm. When a nesting box is placed in a convenient location, it will nearly always take advantage of it.

Besides the nesting boxes, the Crested flycatcher will build in the natural cavities of trees at a height of from six to fifty feet from the ground. Often it will make good use of an abandoned woodpecker hole. One kept house in an apple orchard near the writer's home for several years and when the hollow limb in which it had made its nest was blown down in a severe thunderstorm, the bird readily accepted the ready-made house which was placed near the site of the old nest.

One cannot mention the Crested flycatcher without reference to its peculiar habit of "sewing" an old dried snake-skin around the rim of its nest. Why it does this is an unsolved mystery. Some ornithologists

are of the opinion that it does this in the hope that the skin will frighten other birds away from the nest. Now, while some birds are afraid of the living snake, surely they could not be of the dried skin; by the same token, the enemies of the bird, namely the hawks and owls certainly would not fear it as most of them dine upon snakes. Then too, the skin is very tightly woven into the the nest and is usually hidden from sight except when the light hits it just right. Whatever the purpose, the snake-skin remains the Crested flycatcher's trade mark and rare is the nest of this particular species without it.

The Phoebe is perhaps the best

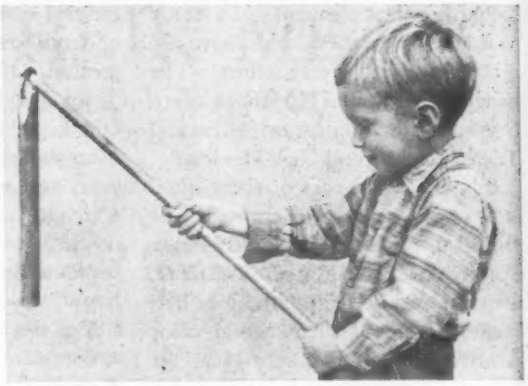
known of all the flycatchers. It is a bird of seven inches, with grayish-olive upper parts and yellowish-white under parts. An eastern species, it occasionally can be found as far west as the states of Wyoming, Colorado, and Texas. Before the advent of man, the Phoebe was content to nest under the shelf of a cliff or under a bank; but today it prefers the barns, outbuildings, and other man-made sites. Often the nest is placed within arm's reach beneath the eaves of a barn or garage. Apparently the bird realizes the protection afforded it from building near human surroundings and the noise from a power saw or other machinery does not seem to bother it in the least. In many instances, it has been known to rebuild the old nest of a barn swallow.

The food of the Phoebe amounts to less than three per cent of useful insects, and consists mainly of cotton-boll weevils, strawberry weevils, corn-leaf beetles, spotted and striped cucumber beetles, ants, grasshoppers, locusts, moths, caterpillars, spiders, ticks, and thousand-legs. Truly, this flycatcher is a friend to agriculture and it pays its annual rent to the farmer a thousand fold by hunting daily in the orchard, the garden and in the barn yard. The call of the chickadee, a permanent resident bird, is so similiar to that of the Phoebe that many persons confuse the two birds. Nesting boxes will

(*Continued on page* 53)

# THRESHING and HOME FLOUR MILLS

By ALDEN STARR



SOME time ago an *Organic Gardening* reader in Florida wrote in response to another article and asked for information about home flour mills and threshing wheat. Of course, wheat and some other grains are processed in large quantity by threshing machines and combines but this is of little comfort for the organic gardener who wishes to grow a half or quarter acre of wheat for his own flour needs.

Since primitive times, man has threshed wheat by trampling it out on the threshing floor of the barn or even on hard dry earth outdoors. Oxen, too, were used to thresh wheat by trampling but the hygienic aspects were dubious. Then, in use for thousands of years, has been the hand flail. A simple, homemade one is illustrated here. The sheaves of wheat are strewn about the floor and beaten with the flail and the wheat is separated from the chaff by throwing both into the air on a windy day. We accomplished this separation here by dropping uncleaned wheat from a height of three feet in front of an electric fan and catching the cleaned wheat on a sheet. Onion and weed seeds which weigh about the same as wheat must be picked out by hand. Of course, in cleaning large quantities of wheat we use a mechanical seed cleaner which may be bought from a mail order house or farm supply store.

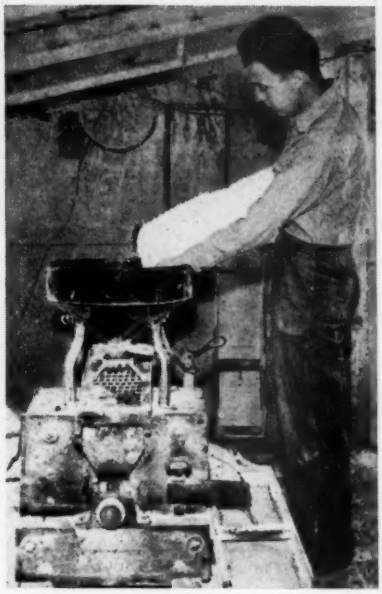
There are a number of home flour mills on the market and I report these here on the basis only of personal opinion and experience with those mentioned.

The Lee Home Flour Mill is tops, in my opinion, for the family which desires to grind its own flour fresh as used. This is a stone mill which operates on a new principle. Metal vanes whirl the wheat against an encircling stone and the mill yields a very fine whole wheat flour. The manufacturers claim only 1½ to 2 pounds of flour per hour but I found that it ground 3 pounds per hour. It was pleasant to find a manufacturer who *under*stated his claims! Incidentally, this mill requires no attention. You simply load it with wheat and come back in one hour for the flour. Many people have inquired about a larger Lee mill with greater capacity. This larger mill is the kind we have at Starland Organic Farm. It holds two hundred pounds of wheat in the hopper and is rated at twenty pounds per hour, although ours grinds about thirty. It, too, requires no attention. It may be loaded in the evening and in the morning has delivered two hundred

pounds of flour. The big Lee mill grinds fine whole wheat flour, but not as fine as the household mill, which operates on a different principle. Both are stone mills, however. The small mill sells at $65.00 and the large mill at $450.00, both f.o.b. Milwaukee.

Bedke, a British firm, makes a home flour mill which is rated at 27 pounds of whole wheat flour per

hour. This is a stone mill and sells at about $150 in this country, about double what it costs in England because of high duty, ocean freight, etc. The agent for Bedke in America is Naess, Mejlaender & Co., 80 Broad Street, New York 4, N. Y.



Illustrated, also, is a Meadows Mill being used by Paul Keene, who advertises regularly in *Organic Gardening*. This is a commercial-size stone mill much too big for the organic gardener, but I am advised by the Meadows Mill Company that they plan to bring out a family-size stone mill (8″ stones) in 1950. The price of this mill would be approximately $65.00 plus the cost of a one or one and one-half horsepower electric motor to operate it. Before the war, Meadows made such a "Kitchen Model Grist Mill" and the 1950 version will be a redesign of this.

Another organic gardener in our town uses an "O. C. Family Grist Mill" made by Ralph W. Frye, N. Delaware Drive, Easton, Pa. This is a steel burr mill which does a good job of grinding flour, but we found it necessary to sift out the bran and put this through the mill again to get a reasonably fine flour. Without stand, the Frye mill sells for $9.65, with stand — $13.65, and with a groove cut in the flywheel for motor-driven belt $3.35 extra (prices plus postage). My friend paid $18 delivered, with stand and belt groove.

Another small mill in the low-cost bracket is the "Quaker City Health Food Mill" made by Straub, 4059 Ridge Ave., Phila. 29, Pa. This,

( *Continued on page* 47)

# BUTTERCUPS and CROWFOOTS

By G. L. WITTROCK

*Assistant Curator of Education, New York Botanical Garden*

THE Buttercups are not as popular in America as the Peonies, with the exception of one species which is so unique and characteristic that it is rarely thought of as a Buttercup. The genus of the species is known as *Ranunculus,* classed as the type of the family *Ranunculaceae.* Over 300 species are accredited to the genus, which is considered almost cosmopolitan in range over the earth, particularly in the North Temperate Zone. The name *Ranunculus* was derived from the Latin: "*rana,*" a frog, in allusion to the fact that most of the species inhabit humid, swampy marshes and banks of streams in woods where frogs are at home.

The herbs contain an acid, caustic juice or sap, that with some people, when applied to the skin will raise blisters. This rubefacient property is most notable with 3 local species of our woods, *Ranunculus septentrionalis* being the worst. They are usually the guilty culprits that cause a skin rash for which the poor poison ivy is accused. The sap of most of the species taken internally is considered poisonous, producing violent effects; one should drink much water as an antidote, if the plant is eaten raw by mistake. In spite of this poisonous property *Ranunculus arvensis* and *Ranunculus sceleratus* are eaten by sheep and goats, and they are actually used as fodder in some European countries, since drying the plant tends to remove the poisonous properties. Advantage of the blister-raising qualities was taken by beggars in former days in Europe to produce and maintain open sores, thus exciting sympathy. In India, some species are cooked and eaten as a vegetable. Even the roots of the Buttercups contain amounts of poisonous properties tasting sharp and biting. They must be avoided and not mistaken for other peppery and edible roots and tubers that can be gathered in the woods. European authors have listed *Ranunculus sceleratus,* the "Cursed Crowfoot," as a food plant and maintain that it can be used as a spinach providing the first boiled water is drawn off, thus removing the acrid principle; American authors state that this species, now established as a weed in the States, is to be considered only as an emergency food.

Many interesting traditions are associated with the Buttercups, originating in legends and stories handed down through the ancient history of man. One of these stories to survive time is that of "*Ranunculus,*" a mythical figure of many thousands of years ago. "*Ranunculus*" was pictured as a young man possessing uncommon accomplishments, particularly in qualities that made him attractive to young ladies. He was fond of music and gifted with a beautiful voice. His sweet melodies, when heard by the nymphs, would attract them. Though charmed and delighted by his voice, the nymphs failed to show their appreciation sufficiently to be wooed and submit to marriage, with the result that the poor fellow died broken-hearted. The Gods, in pity for this unfortunate youth, turned him into a pretty yellow flower of the woods near streams. This flower still bears his name, the *Ranunculus.* One must not forget the popular belief also about the Buttercup, that it is supposed to indicate whether an individual is fond of butter; the test is to hold a flower under the chin; if the chin reflects yellow, the subject is guilty. It rarely fails since most chins reflect the color and how many people truly do not like butter?

The American Indians ate the roots of a species native to New Mexico. Another species was used by them in a compound powder-mixture,

*Left* — Double-flowered buttercups in a wild flower border.

*Right*—A border of buttercups may serve as an interesting foundation planting.

*Circle*—An anemone.

*Below* — *Ranunculus gramineus*, one of the larger, double gaily colored buttercups.

serving as snuff for catarrh and colds in the head. The seed of a California species was ground by Indians into a meal and used for baking. Some species, especially *Ranunculus Pennsylvanicus*, was the source of a red dye to which the Indians added bark of the Bur Oak to set the color. The seeds were smoked by some tribes with the belief that the odor would lure deer near enough for a shot with a bow and arrow. This species is also listed medicinally as a rubefacient, counter-irritant and a narcotic. Another common species of the woods, *Ranunculus abortivus*, was considered of medicinal value; its roots were used as a styptic to stop a nose bleed.

The native Buttercups are described as both perennial and annual herbs with alternate, simple or compound and finely dissected leaves, and with flowers that are yellow, white or red with 5 separate petals and sepals, and many stamens or pollen bearers. When the flower matures the head consists of many hard

fruit called *achenes*. Honey is secreted at the base of the petals, serving as a lure to insects. The flowers are terminal, solitary or panicled and rarely stemless. Most of the native species are propagated either by seeds or root divisions. One of the common European species, much used here in the States in Rock Gardens, is *Ranunculus acris*. This species has a rich, glossy, yellow tone in the flower, and the doubled variety, known as "florepleno," is called in the trade "Yellow Bachelor Button." Many of the species are grown in flower gardens, borders and in Rock and Aquatic gardens since they are naturally at home as alpines, boreals, and aquatics, thus well adapted in formal landscape. The *Batrachium* section of the Buttercups embraces the true aquatic species; these species are natural pond plants, living in shallow water and are used extensively in horticulture for colonizing in ponds along their margins.

The truly beautiful Buttercup species most popular in Europe and with florists in America is a species of Asia known as *Ranunculus asiaticus* and its many varieties. This species is known as the "Asiatic Crowfoot," "Common Garden Crowfoot" and "Turkey Crowfoot." It supersedes all other European and American species of the genus in beauty of form and color. The group is also classed into 2 major sections: the *Persian Ranunculi* and the "Turbans." Both groups have been cultivated in Europe for centuries, in fact, Parkinson mentioned the group in his publication of 1629 as "the double-red crowfoot of Asia." The species, with its many varieties, has since been greatly improved not only in form and size, but into a variety of bizarre colors. The flowers are usually double, more than 2 inches across, globular in outline, and they are found in almost every tone of possible color-shade except in blues. Some are variegated and striped in different colors. They suggest Pompon Dahlias in texture and beauty. A mass planting of mixed or controlled colors is a sight not soon forgotten. Unfortunately, the group is not as popular in the States as it is in Europe. This may be due to the culture that is required. They bloom in this country in late May to early June. They should be planted in an herbaceous border where some shade is present during the warmer parts of the day. The roots suggest miniature dahlia tubers and like them, are not hardy, particularly in the northern States. The tubers should be lifted after the foliage has signs of withering or "ripening off" which usually is in late August. The tubers are then dug up, cleaned, and stored in a cool root cellar until the following spring. They should be divided and planted in the spring as soon as the danger of frost is past. Planting is about 2 inches deep and 6 inches apart, dressing the top soil with a layer of sand so that the leaves can push through easily without injury and strain. The plants like much moisture, a characteristic of all the species of the genus. Propagation is by seed, but the bulb, as the tuber is called, is the easiest method to propagate and is naturally more selective since the colors can be controlled.

The *Persian Ranunculi* is the variation of the true species of *Ranunculus asiaticus*, usually 6 to 12 inches high, with erect stems, simple or branched, and with the inflorescence 1 to 4 flowered. This group requires more care than the others. They are most variable in form and color and are highly cultivated, particularly as cut flowers by florists. The *Turban Ranunculi* are forms of *Ranunculus asiaticus var. africanus*. These plants have larger, broader leaves that are not so finely cut, and the flowers are larger and broader with the petals curving inward, not spreading, and thus suggesting small, double flowering peonies. These beautiful garden *Ranunculi* should be better known in America. Once having observed them, a flower lover will certainly desire them as a part of his home garden.

end

## WILD BEES ARE IMPORTANT GARDEN AND FARM ALLIES

ONE very serious aspect of our present day high-pressure agriculture has not yet reached the public consciousness, and that is the destruction of the wild pollinating insects through the clearing of their nesting sites and the use of poisons in pest control.

Entomologists seem to lose sight of the fact that less than one-fifth of the species of insects are injurious, while the poison that destroys the pest also kills the useful insects. Few people appreciate the extent to which we are dependent upon these wild insects for distributing the pollen necessary to insure the setting of fruit or the formation of seed.

A recent publication of the U. S. Department of Agriculture, (E-584), listed fifty commercial crops that are either entirely dependent upon bees for pollination or whose yields are increased by their activity. These include most of the leguminous crops (clover, alfalfa, trefoil etc.), most of the fruits and many vegetables.

In the pioneer period of our history diversification was the rule, with small areas of each crop. With millions of wild bees of many kinds there was no pollination problem. With the development of specialization, when whole fields and sometimes whole communities were devoted to a single crop, much larger numbers of insects were necessary to supply this service. At the same time that this specialization was coming into practice, the clearing of the land was carried on in such a way as to destroy the nesting places of the wild bees and to reduce their numbers.

Few people are sufficiently observant to become familiar with the large

# Save the POLLINATING INSECTS

By FRANK C. PELLETT

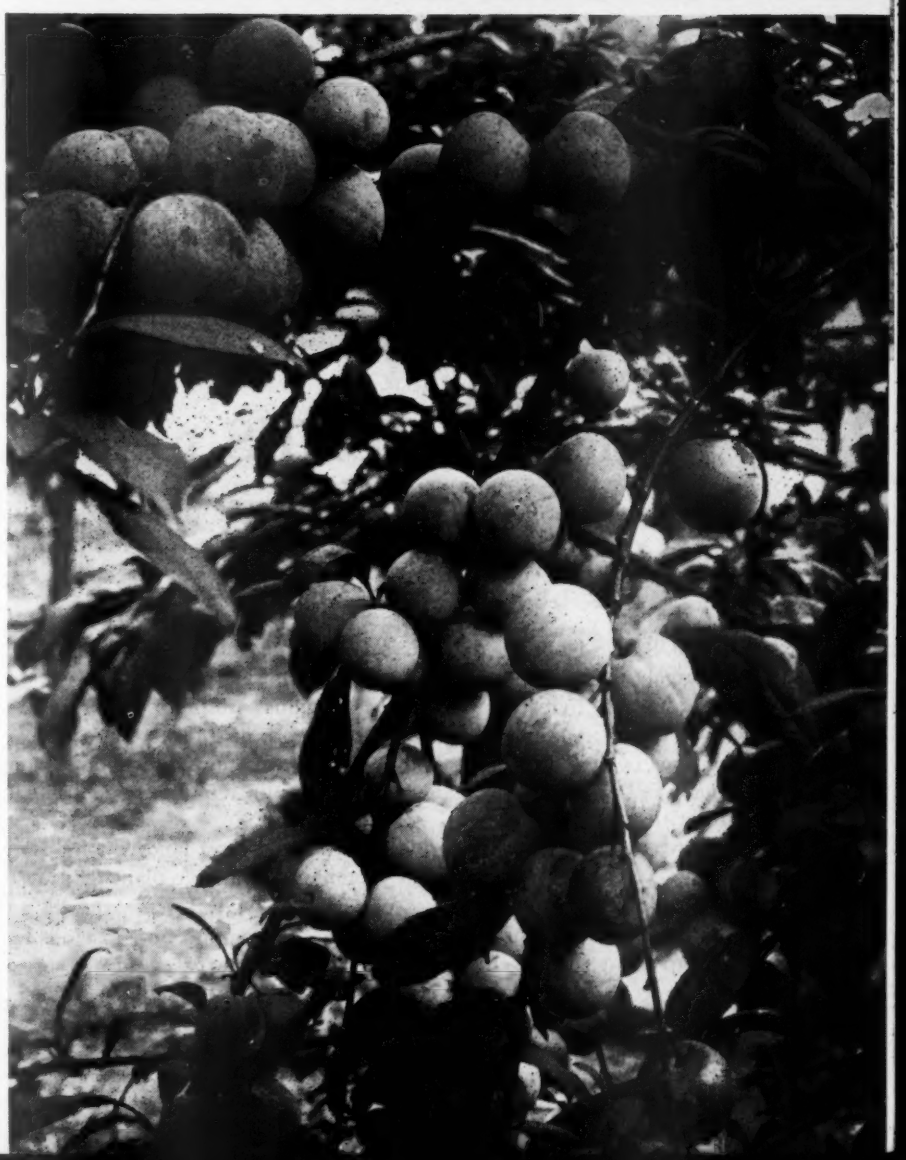
variety of wild bees. They range in size from small insects half the size of a housefly to the big bumblebees so familiar to everybody. Many of them are solitary in their habits and do not form communities such as those of the bumblebees.

There are 296 different species of these wild bees recorded as native to the state of Illinois. New York is known to have 189, Connecticut 231 and New Jersey 250. It is probable that there may be others which have been overlooked by the students of insect life. No matter what crop has been grown, there was always a native insect at hand to carry the pollen to insure pollination.

Sixty years ago red clover seed production in the middle west was ample for the needs of the farmers who depended upon that crop for soil building in their rotation. Five to ten bushels of seed per acre were common yields. As the wild bees were destroyed, the yields constantly fell until, of late, the averages for Iowa and Illinois are now less than one bushel per acre and the crop often is insufficient to pay the cost of harvesting.

Not only have we destroyed the nesting places of the wild bees by the intensive cultivation of so much of our acreage but clean fencerows and roadsides have removed the last possible shelter for such insects. Now the common use of chemicals in the control of insect pests is completing the job, and the farmer is becoming

(*Continued on page* 58)



*Upper*—The Mid-West farmer no longer produces clover seed in its former abundance.

*Lower*—With an abundance of bees to serve as pollinators, Burbank Plums set most freely.

U. S. Forest Service

# Which? HUMUS or MALNUTRITION

## Peat and Organic Wastes from Industries Can Keep the Soil Productive

By J. WERDEN CLARK

NATURAL fertility depends largely on the gradual decay of the wastes of living organisms, grown or introduced into the soils. The product of these wastes is called "Humus" and is variously defined by authorities as—

"A brown or black material, formed by the partial decomposition of vegetable or animal matter."

"The organic content of the soil."

"An important constituent of the soil."

The same authorities give us the added information that—

"Humus substances, in solution, are important solvents of rocks."

"Its compounds are of great importance in relation to soil fertility."

Cropping farm lands carries away commonly available plant foods faster than they can be naturally restored. The constant use of lands for agricultural purposes, in the proximity of heavily populated districts, causes a depletion of humus and impoverishes much of the cultivated area. Organic wastes, of great importance to the growth of healthy flora, become lacking and natural fertility ends. It is plainly evident that many of the desirable properties of the soil cannot be maintained without some kind of a substitute for natural soil humus.

The deficiency of needed organic material in the soil of our long established farming regions is deplorable.

U. S. Forest Service

*Left*—Upper Peninsula Forest Experiment Station, Michigan. Blasted drainage ditch to drain peat bog.

*Right*—Soil profile; woody peat along drainage ditch in Michigan peat bog.

This cannot long continue without imperiling the most vital resource of the nation, the basis of its food supply.

Chemical plant foods have been highly developed, and fine looking crops can be grown by their use in the practically worn-out soils of large areas. The vegetables produced by this means and from such devitalized lands lack vitamins and minor mineral elements, held essential to the health and vigor of the consuming public. When the vegetation is grown in soil containing an adequate amount of humus, no such deficiency is noted.

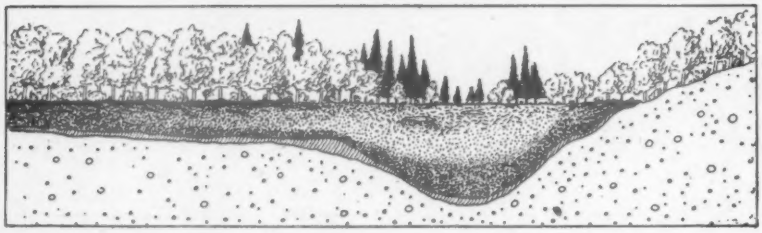
Years ago local trucking and transport, both farm and city, was by horses, mules and oxen. At that time stable manures were widely used to replace soil humus in the cultivated lands. Today, through the development of automotive power, stables are few and far between, manures are hard to get and the cost is high for the average gardener's use.

As a partial aid to growing crops and as a preventative of further soil deterioration, the use of crop residues and cover crops, especially legumes, has become quite general. There is no doubt that great benefit is derived from the use of these materials but such green manures decay quite rapidly and the land is quickly left without any marked improvement.

There is plainly a real need for a source of organic waste products that will provide a satisfactory and persistent humus for mixing with impoverished soil to restore and maintain its natural fertility. The good health of our more thickly settled districts is in serious danger from the undernourished foods grown in nearby gardens.

The soils are overworked and devitalized. They need a thorough reconditioning with a good supply of organic material, sufficient to replace the losses in soil humus, so vital to natural healthy growth.

There are many sources of supply for organic waste. Manufacturers of finished articles, made from organic materials, often have large piles of waste matter. Canning and otherwise preparing various foods general-



ly creates waste disposal problems, sometimes quite serious to the companies involved. Many of the more thickly settled districts have large quantities of garbage and sewage. All such materials can be treated and converted into an excellent form of humus or organic fertilizer. To date, such conversion costs are high and the total supply would rarely be more than a part of the needs of the districts.

There is still a lack that nature seems to have foreseen and, to some extent, to have taken care of. The earth's surface was formed with many a dent and hollow. Along came rains to fill some of these places with still waters. Many kinds of plants and animals were developed to fill the quiet pools with life and with the organic wastes resulting from such existence. These masses of detritus have undergone partial decomposition but an acid condition developed that delayed underwater decay and stopped total destruction. The resultant deposit is widely known as "peat."

In the past, the United States has had little occasion to draw on its peat supplies. As a result, few of its people know anything about peat bogs, peat availability, production or values. Many persons, at the mention of swamps, such as bog, cedar, maple, sphagnum and tamarack, would undoubtedly recall large areas of such lands, generally considering them almost worthless. Some would have a clearer idea of similarly low grade sections of land from the words "bogs" or "meadows." Everglades, quagmires and tundras are local names for like deposits. All are synonyms for peat bogs and the number is almost infinite.

Drainage of a peat bog and the exposure of its surface to the action of aerobic bacteria result in further decomposition of the material and in the production of an excellent and durable humus, comparing quite favorably with well rotted barnyard manures. It has distinct advantages over the manures, in being generally much more retentive of moisture, free from weed seeds, and quite plentiful in many parts of the country.

The experimental use of peat has clearly proven that the better grades, as a source of organic materials, can play a significant part in modifying the physical, chemical and biological properties of worn-out mineral soils and in making such soils much more fertile and productive.

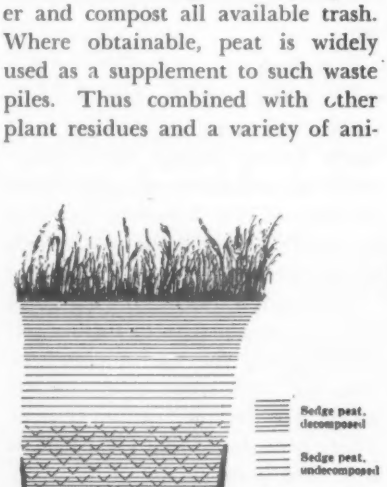
Many of the older agricultural countries have long recognized the values of peat as a soil conditioner and as a diluent of mixed fertilizers. In their constant war against malnutrition, most European farmers gather and compost all available trash. Where obtainable, peat is widely used as a supplement to such waste piles. Thus combined with other plant residues and a variety of animal waste products, peat can considerably increase the end amount of usable humus and improve its fertilizing value.

The United States has many big deposits of peat and numerous other sources for organic waste materials. Peat, by itself, makes a good humus. It makes an even better fertilizing agent, when mixed with other and fresher organic wastes.

The use of an adequate supply of good soil humus will reduce and practically eliminate malnutrition in the growing of vegetables from our overworked lands. Between the trash piles of our urban communities and our natural peat deposits, it is wholly unnecessary for any of our growing food or people to be undernourished.

At the moment, there are many problems involved in the production of a medium priced humus from natural wastes. Some of these problems are simple. None of them are really insurmountable.

We have a disease and a cure for that disease. A large portion of our food supply lacks the nutritive value it would have if grown in lands provided with plenty of good soil humus. We have plenty of material from which to make such a humus. Something should be done toward creating and making available a quantity of such materials sufficient for the maintenance of our soil fertility.



# MISCELLANY

THE issue of passing a law in Congress to bring the question of chemical fertilizers out in the open cannot be dodged much longer. On March 8, 1950, a speech made by Congressman Burdick was printed in the Congressional Record which is worthwhile reproducing herewith. Here it is:

CONGRESSIONAL RECORD — Appendix March 8, 1950
Page A1891.

Fertilizer Influence Fast Becoming a Serious Menace

EXTENSION OF REMARKS

of

Hon. Usher L. Burdick of N. Dakota in the House of Representatives,

Wednesday, March 8, 1950.

*Mr. Burdick.* Mr. Speaker, in my remarks on October 10, 1949, I drew the attention of the Congress to the fact that eight members of the U. S. Senate had protested against the monopolistic practices of the fertilizer industry and asked for an investigation; and that the distinguished Representative from Wis., the Honorable Frank B. Keefe, and the distinguished Representative from Illinois, the Honorable Albert J. Sabath, had each offered resolutions requesting the appointment of a special committee to make a full and complete investigation of the fertilizer industry, and to find the facts in connection with the statements recently made by competent judges that present methods of fertilizer manufacture are not only responsible for unnecessarily increasing the amount of the farmer's national fertilizer bill 250 million dollars but are also the cause of extensive spread of destructive plant diseases, and of the increasing incidence of vascular diseases and degenerative diseases.

These are serious matters, Mr. Speaker, but the most serious phase of this matter is the fact that Federal court records show that a large number of fertilizer companies were indicted and fined for having exerted an illegal influence on State lawmakers, and that while the influence was being exerted, the State laws were so amended as to allow the manufacturers to lower the quality of fertilizer by using excessive proportions of the cheap, soluble sources of nitrogen without letting the farmer know that this was being done.

A letter dated Feb. 25, 1950, written by Mr. William G. Holman, a well-known citizen of Virginia to Mr. Osborne B. Bond, publisher of *Liberty* Magazine, Chicago, Ill., contains some statements far more shocking and serious in their implications than any that have heretofore been brought to the attention of the Congress in connection with this matter. I ask that Mr. Holman's letter be inserted in the Record as part of my remarks.

The time has come, Mr. Speaker, for the Congress to inquire into the charges of collusion, and to take such steps as are necessary to free the fertilizer industry from monopolistic control which is proving to be a detriment to the health and welfare of the people and obviously a detriment to the morals of public officials.

The letter referred to follows:

Washington, D. C., Feb. 25, 1950.

Mr. Osborne B. Bond,
Publisher, *Liberty* Magazine,
Chicago, Ill.

Dear Mr. Bond:

If we really believed in free enterprise, would we shrug away and do nothing about the criminal exploitation of the farmers by the Fertilizer Trust, and fertilizer practices that endanger the health of the people?

Would we condone the leasing of public lands to a few corporations on which are found the principal potash deposits in this country, which enables these corporations to obtain a monopolistic control of such an essential fertilizer ingredient as potash and to use the control to the harm and injury of the farmer?

Would we meekly submit to the encouragement given to a few fertilizer manufacturers through an act of Congress (Webb-Pomerance Act) to acquire a monopolistic control of such an essential ingredient as potash rock and acid phosphate, and to the use of this control to force the smaller manufacturers to lower the quality of fertilizers, and thus impose upon the farmers and endanger the health of the people?

If we know that collusion existed between the fertilizer industry and the Bureau of Plant Industry, and that gifts of money to this agency of the Federal Government by the fertilizer industry had blinded the eyes of these Government officials to fertilizer practices that were harmful to the health and welfare of the people and we shrugged away the shocking implications of this situation, wouldn't that amount to admission that monopoly was in the saddle and free enterprise was a thing of the past? If you want the facts, open the column of your publication to your humble servant and I will present the unvarnished facts.

Sincerely yours,
William G. Holman.

MYCORRHIZA

Drs. Paul J. Kramer and Karl M. Wilbur, of Duke University, report that they tried immersing the roots of pine seedlings, both with and without mycorrhiza, in a solution of radioactive phosphorus. When these seedlings were later spread out on photographic plates, the roots with mycorrhiza had taken up much more phosphorus than those without. This appears to be positive proof that mycorrhiza does aid the roots in taking up water and minerals from the soil, as Sir Albert Howard used to insist that they did.

*—From the Land Newsletter*

And Sir Albert always said that chemical fertilizers prevent the help-

ful mycorrhiza from forming on the roots of plants.

## MEN FACE BLEAK FUTURE

From the Vancouver Daily Province
Victoria Bureau

VICTORIA—The human race of the future will be bald, toothless and dwarfed if something is not done to build up the mineral content of the soils on farm lands. This picture was presented to the agricultural committee of the Legislature in a brief filed by A. H. Peppar of the advisory board of the B.C. Farmers' Institutes in urging the establishment by the Provincial and Dominion governments of chemical boards across the Dominion to check soils and recommend types of fertilizers containing needed minerals.

According to Mr. Peppar many of the ills to which man is heir are due to mineral deficiencies in the soil. If all the minerals are worked out of the land and are not taken up by growing things, how can they reach the human body, he asked.

Mr. Peppar said that hospitalization was costing the people of this province a staggering sum and felt that this could be lessened if minerals were systematically restored to the soil on farms from which the food of the people was produced.

He contrasted the stature and physical superiority of the human of pre-historic times with the human of today but he found that the race of today was much superior to its progeny some 5 to 10 percent thousand years from now. Scientists, he said, forecasted a runt of a man without hair on his head or teeth in his mouth; with a scrawny neck and pinched cheeks—provided man continued to feed from "sick soil."

## SUPERPHOSPHATE

Organic Gardening,

First let me tell you of a new use for *Super* Phosphate—my paint dealer sells it for removing old shellac from floors—*nice stuff*.

I have been a subscriber to *Organic Gardening* for six years and have managed to get myself disliked by the 5-10-5 Boys, but the garden is getting into better shape each year.

Respectfully yours,
George W. Rose, N. Y. C.

## SOIL-BREAKDOWN HITS SUGAR BEETS

The sugar beet is one of the most sensitive crops in the way it reacts to the kind of earth in which it is grown.

Prof. Robert L. Cook, soil scientist at Michigan State College, laid much of the blame to today's big heavy tillage tools and some farming practices in a talk to sugar beet experts in Detroit.

"General use of tractors and heavy machinery along with depletion of the soil's organic matter is breaking down our soil structure and depressing sugar beet yields," he said.

He said greenhouse experiments proved that sugar beets will not thrive in "excessively packed soils" and that tests of the packed soils during the experiments show that some of the trouble is due to a too-slow release of the important plant food element nitrogen in such a soil.

Field experiments which have been carried out for the last three years, he said, show that it may be good farming for sugar beet farmers to skip most of the land fitting which they have customarily done between plowing and planting.

Prof. Cook emphasized that it is now increasingly important that farmers keep their land spongy with organic matter because, obviously, it is impossible to avoid all soil packing since some heavy machinery must be used.

—*Flint Michigan Journal*
Feb. 25, 1950

## SERIOUS LIME BURN

In their recent free issue on lawn care, O. M. Scott & Sons Co. of Marysville, Ohio, print the following letter from Helen Wallace.

"When you print your early spring 'LAWN CARE' please do me a favor and warn ignorant folks like me to be careful in using lime.

"The first warm Saturday in March I ordered lime and a spreader

from the local hardware store. In applying, I got my feet wet as I wore tennis sneakers and socks. The lime sifted down inside my shoes and gave me second degree burns on my feet. It was two hours before I could locate a doctor and nobody knew what to do.

"The burns healed up in five weeks and then followed four more weeks of a secondary infection. So you see I am 'way behind in my gardening now and I think it would be wise to warn people. The lime sent me by the hardware store was marked *Hydrated Lime*."

Organic Gardening has always recommended the raw ground limestone only and has always cautioned against the hydrated type.

●

## CHEMICALS HURT FISH

The fish and wildlife service said today it is studying the effect of the increasing use of chemical weed killers on wild animals and fish.

At Leetown, W. Va., E. W. Surber, the agency chief of east coast fish cultural investigations, is experimenting in the use of herbicides such as 2-4-D, TCA in ridding rearing ponds of undesirable plants.

At the Patuxent research refuge, Laurel, Md., Francis M. Uhler is studying the use of weed killers in improving marsh habitat for muskrat and ducks.

Service officials said there frequently is a great deal more thorough cleaning out of weeds around telegraph poles, railroad right-of-ways and the like, than is necessary.

The widespread use of weed killers

in midwest corn fields also prevents the regrowth of much vegetation upon which certain wild life species feed.

Fish also are destroyed when dead weeds, rotting in the water, use up their oxygen supply.

Thus, the service said, weed killers can prove to be either useful or detri-

mental to wild life depending upon the methods employed.

The answer, then, would be not to use chemical weed poisons, but to develop machinery to pull out the weeds and give them to farmers for use as an organic matter fertilizer.

### STAG HORNS

Here is a clipping from the New Jersey Herald of Newton, N. J., Feb. 16, 1950:

India will quit grinding down stag horns for fertilizer and sell them to British cutlery manufacturers for handles, under a new agreement.

Stag horns make an unusually good fertilizer, rich in nitrogen. Don't the Indians know it?

end

### ORGANIC AWARDS

Here is an important letter from W. A. Bruce of Fort Smith, Arkansas, which is worthy of consideration.

Dear Mr. Rodale:

During the first part of 1949 I was asked to be Chairman of the Pasture Improvement Contest which was sponsored jointly by the Kiwanis, Lions, Rotary Clubs, and the Sebastian County Farm Bureau, here in the City of Fort Smith, Arkansas. It was to cover the north half of Sebastian County, and for the first time we reached the goal of approximately 10,000 acres, which were covered by a blanket of green througout the year.

At the end of the contest a banquet was held and several awards were made. One is an annual award given by a local citizen, for the improvement of dairy cattle; another for the improvement of the land through proper fertilization, which included chemical fertilization only; another award was for the greatest all-round advancement and improvement of each farm.

The question that comes to my mind at this time is, would not this be an opportunity to have an organic award of some kind, and if so, what particular requirements would be fitting for this age group. This Pasture of Green Contest was held in connection with the annual 4-H Achievement work, and you are undoubtedly familiar with the National Organization of the 4-H groups. It would seem that this would be the ideal time to instill in the members of the 4-H Group, whose ages range from ten to twenty years, the importance of the Organic theory.

My wife and I desire to put up $100.00, together with certain rules and requirements necessary to interest these young people in studying and becoming familiar with all phases of Organic work, but we are at a loss to know what such requirements should be, and are asking your help and suggestions at this time, in arranging a list of requirements for eligibility.

We believe that every farm should have a compost pile of some size and in order that there may be an actual beginning of this program, some points should be given for the actual reading of certain lists of books, which should be suggested. A certain number of points should be given for sheet composting, certain points should be given for the actual start of raising earthworms; a certain number of points could be given for progress on mulching; the saving and distribution of animal fertilizer, etc.

The real object in coming to you for help is that we feel that this would make a good starting point for future America, as it might pertain to the application of the Organic theory, and we need your help and suggestions as to a proper starting point.

We have a peculiar situation here locally, and that is that our local County Agent has been very open-

minded about mentioning the importance of Organic Farming. At the same time he is a member of the local Farm Coop that sells commercial farm fertilizer. This situation probably is more or less universal as far as the County Agents are concerned, but the fact that he does endorse and recommend the application of organic matter is a little bit unusual.

Needless to say, my wife and I have been ardent Organic gardeners for the last five years, and believe that we would have a chance to inoculate our young people with this valuable work, through the 4-H organization.

Yours truly,
W. A. Bruce

(*Editor's note*) *This would be a wonderful method for spreading the organic farming movement.*

●

### ISN'T THIS AWFUL

Here is an item from the Detroit *Free Press,* Jan. 30, 1950:

"The State is getting very tough with Michigan's fruit farmers. They're given notice to spray their orchards at certain times of the year. If they haven't done so 90 days later . . . and without a second warning . ... the State moves in with bulldozers and down go the trees. It's all part of a campaign to protect other orchards from various insects and blights."

Readers—please write to the Michigan State Department of Agriculture, East Lansing, Michigan, to the Governor of the State and any other State officials about the dangers of such a practice.

end

# There are Profits *in Mistakes*

By LEONARD WICKENDEN

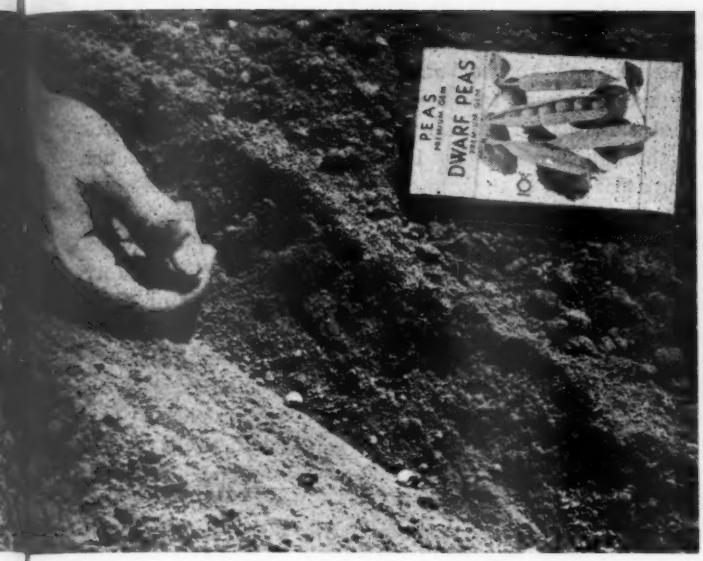
PART I

LET'S admit it: all gardeners, old-timers and beginners alike, make mistakes. We may attribute our failures to unfavorable weather, to poor seeds, or just to bad luck, but in our honest moments we know that the blame rests almost entirely on ourselves; something we did was wrong. These mistakes we usually write off as a total loss—loss of all or part of a crop, or, at the very least, loss of self-esteem. Yet, properly handled, no mistake should be a loss; on the contrary, it should be turned to long-time profit. If by making a mistake in 1949 we improve our technique for the next ten years, the profit may well be substantial.

The first step towards bringing about this happy result is to be honest with ourselves and admit that we have been guilty of an error in judgment. The second step is to figure out what we *should* have done in place of what we *did*. Below, I discuss some of the mistakes I have made myself or seen others make. Each one is under a heading so that you can glance at it, if you wish, and say: "Oh! I never make *that* mistake," and skip on to the next. If, however, you arrive at the end of the series in record time by a succession of nimble leaps, it might pay you to do a little honest soul-searching. Are you *sure* you never make these mistakes? Isn't it possible that you are losing the chance to turn a loss into a profit?

(1) *Timing.* I put this first because I think it is easier to go wrong in picking the time to sow or to transplant than in any other gardening operation. This is especially true, I suppose, for us gardeners in the northern zone. We really do have an alibi in this connection, for our most careful calculations are so often nullified by the antics of the weather. But, even so, by making full use of previous experience and the information supplied by the Weather Bureau, failures resulting from choosing a date too early or too late should not be frequent.

Every gardener should be able to read a weather map and if there is no weathervane near at hand he should make or buy one and install it on his own land. I do not suggest that he must be an expert meteorologist, but by noting the locations of the highs and the lows, the warm zones and the cold zones, and the direction of the wind, he should be able to make a fair guess as to whether the next few days are likely



to be warmer or colder, drier or wetter. I'm afraid, however, that few of us do this; we look at the calendar rather than at the weather map.

Over a large area of the northeastern states, last summer was beset with difficulties for the vegetable-grower—both home and commercial. The weather was up to all kinds of tricks throughout the season. April was about normal; in other words we had every variety of weather with sunny days followed by rain, frosts by warm sunshine. In May, however, the weather began to show off. The month started with warm days and heavy rain; on the night of May 2nd, my rain gauge registered 2¼ inches and on May 4th the thermometer rose to 83°. On the 9th, cool weather arrived and on the 11th we came close to having a frost. Cool weather continued until the 18th when summer came back for two days, but my diary tells me that the 22nd (Sunday) was "a horrible day—rain, chilly, dreary."

The rest of the month was abnormally cool, yet when June 1st arrived I told myself that summer was definitely here, so I sowed my bush limas. But the June of 1949 took a long time to realize that everyone in the Northern Hemisphere was looking to her to usher in summer; "wait", she seemed to say, "until the 21st; that's when summer really begins." In the meantime, she kept on trying to behave like late winter. Even when the days were reasonably warm, night temperatures would drop to 50 or lower. In my 50 ft. row of limas, about twenty seeds germinated and when I scratched up the soil I found seed after seed brown and rotted.

But Whitsunday (June 5th) was warm and sunny and the Monday following was another grand day. This time, I *knew* summer had come, so I planted my sweet potato slips. Poor things! They came of a long line of ancestors who had made their homes in the tropics or subtropics and they loved warmth. No sooner were they in the ground than my Connecticut thermometer did another nose-dive and then, night after night, the thermometer dropped into the low 50's. I tried to protect my sweet potatoes by covering them but one by one they curled up their leaves, shivered miserably, gave me a look of reproach and died. Of fifty plants only six survived and they were so enfeebled by the harsh condition of their infancy that they were never anything but sickly adults.

The Living Soil is Friable

Here were two failures—bush limas which I had been growing ever since I first had a vegetable garden and sweet potatoes of which I have had several satisfactory crops. What had I done wrong?

The answer is fairly obvious. I had attached too much importance to the calendar. On May 22nd we had had a cold rain and the rest of the month had given us little in the way of warmth, so the soil was still quite wet and definitely cold. But because the calendar said it was June 1st, I sowed my limas. Even though, five days later, we had a really warm day, the mischief was done. The damp, cold soil was no medium in which to bring a tender lima bean seed to life. Only the

hardiest of them survived; the rest tried valiantly to sprout but were stricken with infantile pneumonia and came to an early and lamented end.

What should I have done? Obviously, I should have looked at my soil instead of the calendar. In self-defense I must state that I *did* look at my soil, and with misgivings, but I was fooled by that June 1st business. Because I had torn off the May sheet and the new sheet was headed "June", something magical had happened. Summer was here! An old gardener like me shouldn't have been fooled. I should have realized it was just another day and that a man-made calendar meant nothing at all to old Mother Nature. I should have learnt from the weather map that there was little prospect of a steady flow of warmth from the south and that my soil was likely to stay cold and damp for several days.

To show how much difference a few days will make, a second sowing of limas was made on June 5th—that fine, hot Whitsunday. They came through so quickly that I transplanted enough of them to fill the gaps in the first row. What is more, the second row was bearing beans before the few survivors of the first sowing.

Do not forget, however, that it is as easy to be too late as too early. Delay the sowing of your peas and a scorching July sun may burn them up. Therefore sow them (and with them your spinach) as soon as your soil is reasonably dry and crumbly, even though it be the third week in March. Get your onions, leeks and lettuces sown in the cold-frame as early as is practicable. Do not delay too long with your late brassicas—your cauliflowers, cabbages and Brussels sprouts for fall consumption. In 1949, many growers lost these crops because the drought made the young plants so slow in developing. I sowed mine on June 5th and, thanks to a warm fall, had a fine crop of all three, but there were times when I despaired. As far as facilities permitted, I watered the young plants but what they wanted was rain—steady, soaking rain—but through June, July and August it did not come and my seedlings grew with painful slowness. That they finally came through successfully I believe can be attributed to the compost which had been fed to my soil. The high organic content of the soil held moisture even when the surface was powdery dry.

What have I learnt from my mistakes? To put it in a few words I would say that with peas, spinach, onions, leeks and lettuces, and with crops grown for fall consumption, better be too early than too late; with hot weather crops like limas and sweet potatoes, better be too late than too early; and—don't take too much stock in the calendar.

(2) *Depth of Sowing.* Here is a matter regarding which there is lots of room for differences of opinion. Let me state my position right at the start by saying that I believe the commonest mistake is to sow too deep. Let's consider the matter.

Books on gardening for beginners usually tell them that the depth of sowing should be twice the diameter of the seed, which invariably has the poor beginner baffled. If all seeds were approximately spherical he could follow the rule with confidence, but what is he to do with long slender lettuce seeds or still longer seeds of salsify or flat seeds like cucumber or squash? Even with bean seeds he may well be puzzled to know which is the diameter.

The more experienced gardener pays little attention to such a rule and, generally speaking, is not nearly so fussy about the matter as the over-anxious beginner. Among other things, he knows that what may be a perfectly satisfactory depth in a light, sandy soil may be disastrously deep in a heavy soil. The matter is one that cannot be encompassed in a rule; procedures must be adopted on a basis of logic and good sense.

Let us consider some fundamentals. Nature scatters seeds of weeds and wild flowers on the surface. Sometimes they never get covered at all; at other times, rain may carry them below the surface or fallen leaves and dead plants produce a covering of a kind, but still a very different one from the layer of soil which the human gardener so carefully provides. Yet the seeds of these wild plants germinate and yield sturdy plants, as any gardener knows only too well.

I have never seen eye to eye with those who teach that we should exactly imitate Nature's ways. Very much of what we do in our gardens is at odds with the procedures followed by Nature. She does not sow her seeds with dandelions in one row, pigweed in the next and purslane in a third, nor does she thin out the seedlings to give the favored few a life of ease. She broadcasts the seeds and lets the seedlings fight for life, not only with others of their own kind but with dozens of varieties in a closely woven mat of tangled roots. Because we want plants for the table that will satisfy our hunger, please our eye and delight our palate, we discard Nature's method and do everything we can to assist the chosen seedling to achieve its finest development, even though we have to destroy dozens of its brothers and sisters in the process. To do this is not only good gardening practice but a wise and necessary course.

However, while we can legitimately try to improve on Nature's practices, we need not ignore them. We can observe what she does and learn from her. One very obvious lesson which she teaches is that it is not necessary to bury a seed deep beneath the surface to cause it to germinate.

Why, then, do we cover our seeds when we sow them? Is it not almost

(*Continued on page* 59)

# FLOWER ARRANGEMENTS

by
ANN ANDREWS

MRS. JOHN R. Fisher's flower arranging at Williamsburg is as much an art in winter as in summer. She has revived old techniques in keeping her arrangements colorful the year around.

Mrs. Fisher found little difficulty in discovering many flowers of authentic period, for 18th century gardeners were enthusiastic in the cultivation of plants old and new, and corresponded freely on the subject. Mr. John Hancock, uncle of John Hancock, wrote: "I return you my heart Thanks for the Plumb Tree and Tulip roots you were pleased to make me a Present of—I have sent my friend, Mr. Wilks, a Mmo. to procure for me 2 or 3 Doz. Yew Trees. Some Holly and Jasmine Vines—I do not intend to spare any Cost or Pains in making my Gardens Beautiful or Profitable."

She found hints in travel books, the works of naturalists, and from old flower prints for arrangements. Fortunately, during the 18th century the English were producing prints that were actually flower arrangements, and Robert Furber made 1730 a notable year in the horticultural world by issuing a catalogue, very much in the grand manner, which consisted of 12 large floral arrangements, representing the months of the year. Each print was made up of all the flowers that bloomed during that month, and although these prints are imaginary in composition, they show an entirely new method of arrangement. Her ideal is to make the arrangements look as "printy" as possible, although it is necessary to take into consideration that the actual flower pieces will be seen from at least three sides.

This makes modification of the print pattern necessary.

Hours before the historic buildings of Williamsburg, Virginia begin receiving their daily streams of visitors, Mrs. Fisher is busy arranging her bouquets at the Governor's Palace, George Whyte House, the Raleigh Tavern and other buildings. Among the containers she uses are a nine-figured posy holder of Dutch Delft, a Wedgwood creamware holder with five openings. And, particularly suitable for use in windows, are oblong and square "bricks" suitable for holding bulbous flowers such as the various narcissi, short-stemmed tulips, colchicums, hyacinths, and sternbergia.

Dried Flower Arrangement ▲

▼ Fresh Flower Arrangement

# CANCER PART XIII—SUGAR—(C)

IN THIS concluding chapter on sugar I want to give a few additional facts to show why white sugar should be eliminated from the diets of those who do not wish to contract cancer.

Under date of January 19, 1950, the U. S. Food and Drugs Administration issued the following order:

*"Notice to manufacturers and distributors of foods and drugs containing artificial sweeteners.* Chronic-toxicity studies conducted by the Food and Drug Administration show that the artificial sweeteners dulcin (also known as sucrol, or 4-ethoxy-phenylurea, or paraphenetolcarbamide) and P-4000 (also known as 1-n-propoxy-2-amino-4-nitrobenzene) cause injury to rats when fed at relatively low levels for approximately two years. Consequently, the Federal Security Administrator regards these chemicals as poisonous substances which have no place in any food."

If you eat products such as purchased pies, cakes, ice creams, sodas, candies, etc., you never can tell what chemical sweeteners have been used in their manufacture. We are living in the chemical age. The chemist is becoming more and more adept in working with chemicals and discovering unusual things which they customarily look to starch-carrying not health-conscious with all his knowledge, if left alone, he would eventually experiment himself right out of existence. We must not worship science.

## SUGAR AND ENERGY

There is a fallacy current that you must eat sugar to gain energy. If this is so, you can get it from natural forms of sugar such as fruits, carrots, beets, etc. However, Dr. Royal Lee of the Nutritional Foundation of Milwaukee, Wisconsin, in an address (April 2, 1949) to the members of the American Academy of Applied Nutrition, said:

"While sugar is a relatively pure carbohydrate in its natural forms, it ranks secondary to starchy foods as a source of energy or calories. We customarily look to starch-carrying foods for our sustaining foods, foods necessary in larger amounts by those who use their muscles in manual labor or other exercise, for it is a first principle of nutrition that the only increased requirement in food, by those who burn up more energy, is a greater need for carbohydrate and the carbohydrate metabolizing fats and vitamins, the requirement for other foods being relatively constant.

"There is a very good reason why starches are better than sugars as energy foods. It is because they are assimilated slower than the sugars and thereby fail to overload our pancreatic function of supplying insulin. Sugars are absorbed at varying rates, glucose being the quickest to diffuse through the intestinal wall, levulose the slowest. All sugars are converted into glucose after absorption into the body. That is again apparently because glucose is the most diffusible sugar, as once in the blood stream, it is the quickest to pass through the tissues and arrive at the muscle cell, where it is converted into energy. That same diffusibility, however, is the reason that it is the least desirable of sugars to eat. It is the only sugar that has been definitely found to cause diabetes, by its effect of overloading the pancreas, at least in test animals."

One need not worry about sugar, if it is *the* factor in producing energy, because 68% of the starch which our bodies take in is converted to sugar.

## SUGAR, A HABIT

Sugar taking is a habit which can be developed, and once the habit is controlled there is no longer any craving or need for it. Most of us are sugar drunkards. When a waiter saw me eating buckwheat cakes without syrup, he said if he could not use syrup on his wheat cakes and sugar on his oatmeal he would rather cut his throat. His taste buds need a little talking to. When I eat wheat cakes without syrup I enjoy the taste of wheat cakes, which is what I am after when I order wheat cakes. If you will even eliminate the butter, when ordering buckwheat cakes, you will get the delicate taste of the buckwheat. I would not think of smothering that taste with syrup.

The habit of eating sweet-things is an acquired one and if children were taught proper control over sugar they would never develop such an artificial habit. Even a young horse has to be taught to like sugar. Before I knew better, I used to offer sugar to young weanling colts and they would invariably spit it out. We would hold them and force it on them, thinking it was good for them.

I was in a sugar factory recently and visited the company cafeteria. The atmosphere in the whole factory is terribly saturated with sugar. When you enter for the first time you can feel it forcing itself down your throat. I watched one worker put six spoonfuls of sugar in his coffee. His system was so saturated with sugar that he required six teaspoonfuls to make a dent on his taste buds. When you learn to cut out sugar you become more the master of your will and then can more easily master other undesirable habits. By reducing the excitation of the taste buds you can more easily cut out the taking of salt. If you go at these dietary errors, one at a time, you will find it much easier. The other day at a banquet I did not turn down the cake that was put before me for dessert. It practically nauseated me upon eating it, for I am no longer used to such a concentrated sweet taste as the icing afforded.

## DOCTOR'S OPINION

Here is part of a letter I received recently from Dr. H. R. Lotz of Bristol, Conn.:

"This I have known for twenty years—that positive cancer sufferers in the final stages, and right up to the point of death, can live free of pain if they will live entirely on nat-

ural food and completely eliminate all sugar, which means just the *artificial sugar* and the complete abstinence of all products in which sugar enters, such as bread, cake, etc.

"But I do not think this is because of any harmful ingredient in the sweet, but rather that the excessive use causes a complete imbalance in tissue cell. Or exactly similar to what happens when an excess of nitrogen and lack of other nutrients are incorporated in a piece of garden."

In a book called *Truth About Sugar,* by H. V. Knaggs (1913), the author says:

"Brandt, an eminent German chemist, has shown that a six to ten percent solution of cane sugar causes irritation, with the redness of the mucous lining of a dog's stomach."

Here is what the American Medical Association, through its journal *Hygeia,* thinks about sugar:

"One pound of sugar provides 1,800 calories and nothing else. It contributes none of the nutritionally important protein foods as whole grains, fruits and vegetables.

"The eating of white sugar, either cane or beet, in large amounts, may place a burden on the pancreas. The pancreas secretes a substance which is necessary to enable the body to use sugar as a fuel food. If the pancreas is impaired or injured, its ability to secrete insulin is also impaired and as a result the body loses its ability to burn sugar.

"There is also evidence that excessive consumption of sugar may weaken the protective power of the liver and thereby cause numerous so-called bilious symptoms. Brown sugar has the same effect as white sugar. Eating sugar in excessive amounts may make one feel dull and bilious because of these reasons."

In my own opinion—I would eliminate brown sugar as well as white and endeavor to get my sweets in a less concentrated form such as fruits, carrots, beets, etc.

## NATURE HITS BACK

Here is an item from *Nature Hits Back,* by Macpherson Lawrie, M. D.:

"The increase in the consumption of sugar is the most outstanding dietetic perversion of the age. Apart from any other consideration, it upsets the whole balance of nutrition. Sugar is a fuel, and today we take into our system this purely fuel food in amounts sufficient to shatter every dietetic principle and law. Our digestive glands and organs may be adaptable, but it is impossible to believe that during the last hundred years our physiological processes have so changed as to enable our bodies to deal normally with an excess of fuel so staggering. Especially is the amount consumed in tea and other fluids remarkable. Six cups of tea each day, each containing two lumps of sugar will alone account for over 40 lbs. in one year. Further, in connection with its use in fluid, we must remember that, with sugar so consumed, salivary digestion is lacking. Saliva is an agent of supreme importance in the digestion of carbohydrate food, and a flow of saliva is normally aroused by mastication. By swallowing, in fluid form, such vast amounts of sugar, the digestive action of saliva is not enlisted and as a result we must throw upon other digestive glands an abnormal strain which may have far-reaching and serious effects."

Let me quote a short item from an article entitled *Case of Dental Caries vs. The Sugar Interests,* which appeared in the Southern California State Dental Assoc. Journal (Nov. 1949):

"Here we come up against a great obstacle to the solution of our problem, and that is the miseducation of our people by the hucksters who sell white flour, candy, pastries, soft drinks, especially the sweetened varieties which in addition to the sugar frequently contain a great quantity of phosphoric acid, which helps to destroy our children's teeth."

## THE TRUTH ABOUT SUGAR

I would like to present a most important excerpt from the book *Truth About Sugar,* by H. V. Knaggs, M. D., mentioned above:

"Acidity, or sour stomach, is a common symptom among those who take cane sugars or sweetmeats to excess. The acids formed as a result of the decomposition of the sugars in the presence of meat and other proteids, create a form of acid intoxication, or self-poisoning, which manifests itself in various types of catarrh or rheumatism.

"The chief acid produced in this way is that known as oxalic acid. Dr. Helen Baldwin has proved by a number of experiments that animals fed on meat and sugar, both of which are free from oxalic acid, until a state of extreme fermentation ensued, developed marked oxalic acid poisoning. I have repeatedly seen this condition myself among patients who are suffering from dilated or catarrhal stomachs, due to the abuse of milk and sugar foods, and when the gastric contents were in the same condition as that of the animals cited. This oxalic acid when it reaches the blood converts the soluble lime salts into an insoluble oxalate of lime, and thus induces the condition of the system known as decalcification or lime starvation.

"Since lime builds the teeth and bones, and gives stability to the nerves and tone to the muscles, the consequences must necessarily be serious.

"The abuse of sugar, owing to this action of its acid by-products upon the lime in the blood, is the usual cause among the young of rickets and decay of the teeth, of adenoid nasal growth and inflamed tonsils . ."

## ATHLETES AND SUGAR

A man who was once an athlete and is now a minister, Rev. Gil Dodds, who I understand holds the record for the fastest indoor mile, recently addressed the children at the school where my young daughter attends, and cautioned them against the over-consumption of sweets. He told them that when he was in training, he severely eliminated sugar, because he found that it put his body out of condition. He said he took extremely little sugar at other times.

This could be an answer also to those who believe that sugar is needed for energy.

CONCLUSION

It is not maintained that the eating of sugar is a direct cause of cancer, but it may be a contributing cause to it. There probably is no *one* cause of cancer. There are too many factors involved. For example, not everyone who smokes a pipe gets cancer of the lip. Perhaps it gets only persons who do not have a healthy condition of their body. Thus a person who smokes a pipe, and eats excessive amounts of sugar and salt, may be more easily liable to contract cancer of the lip. Perhaps if one smokes a pipe and eats sugar and salt, but has a 100% diet of organically produced food to protect the body, he may not get cancer of the lip.

Sufficient authorities have been produced to show that the taking of sugar is not a healthy thing for the body, and I believe it is common sense to state that a strong, healthy body can resist that paralysis of its functions which we call cancer. Therefore I unhesitatingly recommend that every reader of this magazine reduce drastically, or eliminate entirely the use of industrial sugars.

(*End of cancer series in Organic Gardening Magazine*

—

ANNOUNCEMENT

When I originally began to write the articles on cancer, I figured that it would comprise at the most, three or four instalments. But as I got going, I came across so many interesting facts in connection with this disease that I began to enlarge my conception of the amount of space that should be given to this subject. Thus far it has already gone to 13 instalments, and it looks as if it would have gone for six or seven more.

However, I do not believe that it is within the province of the function of a garden magazine to probe too deeply into health matters. The correspondence from readers, which was brought about through this series has shown that there is need for a separate magazine devoted exclusively to health problems and it has already been announced that we are starting such a publication to be called *Prevention*. We chose this title so that it would ever be a reminder that we must be concerned more over prevention of disease than cure. The amount of subscriptions coming in on the new magazine is a sign that the decision was a correct one.

The series on cancer will not be continued at once in the new magazine. We first wish to build up its circulation so that we can speak to a relatively large audience when we begin again on this subject.

For the benefit of those readers of *Organic Gardening* who will not subscribe for *Prevention* magazine, it is only fair that I give a brief outline of what the rest of the series will consist, and perhaps they will take my word that I have the supporting data to back up each claim made, and may therefore wish to act accordingly to the information given.

ALUMINUM UTENSILS

The next article in this series would have dealt with the harmful effect of aluminum cooking utensils on health. We have been cooking with stainless steel and glass for over 20 years. Aluminum is a soft metal which, over a certain quantity, is toxic to human beings. There is much evidence, opinions by physicians, that aluminum should not be used for this purpose as some of the metal gets into the food.

DRUGS AND CANCER

There are some medical data available that the overtaking of medicines may be a contributing cause to cancer. Many of these concoctions are poisonous in larger quantities. One should take medicine only in absolute emergencies. Even cough syrups and other seemingly harmless medicaments contain strong chemicals.

CARCINOGENIC CHEMICALS

One instalment would have dealt with the known cancer-inducing chemicals. They consist of certain parts of coal tar, and many of them are used for industrial purposes. It is believed that such chemicals are contained in gasoline and tobacco smoke, also in coal smoke along with sulphur.

The rest of the series would have been general theoretical discussions of the subject including the effect of the use of poison sprays and chemical fertilizers. In about two years when the series is completed it will be published in the form of a cloth-bound volume, and will be advertised in this publication.

J. I. RODALE

—o—

**All persons wishing to join an Organic Gardening Club, contact the person in your area whose address is given below.**

*Organic Soil Builders of Lake County, Illinois*
Mrs. A. C. Leiter,
Box 148, Rte. 1, Grayslake, Ill.

*Ft. Worth Organic Gardening Club*
Mr. George R. Barnum,
1205 Waggoman St., Fort Worth 10, Texas

*Organic Gardening Club of Dallas, Wisconsin*
Mr. and Mrs. Alvin Tietz,
Box 74, Dallas, Wisconsin

*Roseburg Organic Gardening Club*
Mrs. Inez Hitchman,
2615 Harvard Ave., Roseburg, Oregon

*San Fernando Organic Gardening Club*
Mrs. T. M. Thomas,
12404 Weddington, N. Hollywood, Calif.

*Organic Gardening Club of Vandalia*
Mr. William Giltner,
R. R. No. 1, Vandalia, Missouri

*Organic Gardening Club of Santa Clara County*
Mrs. A. J. Drebling,
Quito Road, Box 649, Santa Clara Co., Los Gatos, California

*Organic Gardening Club of Tacoma*
Harriet Kennedy,
Western Earthworm Hatchery,
505 East 93rd St., Tacoma 4, Washington

*The Organic Farm-Garden Club of Western Michigan, Chapter No. 2.*
Mr. Elliott Link, President
Route No. 2, Hesperia, Michigan

*The Organic Garden Club of Cincinnati*
Charles R. Cole,
3515 Evanston Ave., Cincinnati, Ohio

*The Organic Garden Club of Pittsburgh*
Stephen Steranchak, Atty.,
706 Park Bldg., Pittsburgh, Pa.

*Organic Gardening Club of Kansas City*
Mrs. William A. Spidell,
8029 Summit St., Kansas City 1, Mo.

*Organic Garden Club of Los Angeles*
Frank Murray,
143 N. Bixel St., Los Angeles 26, Calif.

# Eat Foods -- Drink Water

***An Account of the Improper Use of Foods***

By MELVIN E. PAGE, D.D.S.
Biochemical Research Foundation, St. Petersburg, Fla.

PHYSIOLOGY is not only a subject taught in high schools and colleges, it is a subject which can be used to our advantage in everyday living. Many teachers fail to get the practical side of physiology across to their students, with the result that it holds very little interest to them and is forgotten soon after the examination.

Man is distinguished from other animals chiefly by his mechanical ability. He has learned to do marvelous things with his head and fingers. He is so fascinated by the things he can do or the things he has made that he may overlook the greatest marvel of all—his own body. Not only *may* he overlook this marvelous mechanism, he actually does. For in no other way can the abuse he gives it be accounted for.

One of the common roadside signs to be seen in Florida is, "All the juice you can drink for a dime." Now the man selling the juice does not want to injure his customer; he wants only to create business and to make a little money for himself. But actually he is doing both and the customer is usually well pleased, especially if he has driven a shrewd bargain and has consumed what he considers to be more than a dime's worth.

To explain, let us look a little more closely at the mechanism involved in the drinking of the juice and the possible effects of so doing.

We sometimes overlook the fact that man is no different in fundamental respects from any other animal. By that I mean that chemically and mechanically his body works much like the bodies of other animals.

For instance, he takes food and drink and by digestion and assimilation converts them into his own substance or into the fuel for his activities. He has been doing this ever since he was a living organism. For 99.999 per cent of this time he took food just as he found it and his only drink was water; just the same as every other animal. In fact, man still has the same selective mechanism he was given in the first place. This mechanism is appetite and thirst, four tastes and ability to distinguish odors.

Our Maker gave us only this simple mechanism because this was all we needed. It is the same mechanism which most other animals have also. With it they are guided when and what to eat, when to drink, and when to stop both.

Strange as it may seem, this mechanism worked perfectly for us until recently and still does work perfectly for other animals with the possible exception of the animals which have come under man's control.

Then why all this hub-bub about diet, soils, nutrition, vitamins, minerals, carbohydrates, etc? Isn't this evidence that we need something more than this simple mechanism? That's the rub. We do. Man has so changed his environment through his mechanical ability that his simple gauges of appetite, taste, etc., do not work so well. He has therefore had to discard them to a degree, and laboriously learn something of his

inner workings, the contents of foods and soils and a dozen related subjects, that he may do as well when guided by his brain as he did when guided by his tastes.

The trouble is that he has not reached that point yet. Even after the scientists reach it (if they ever do) it will be a long time before this knowledge is in effect for everyone. Still something must be done. It is a more serious problem than most people realize. Unless man goes back to the ways of his ancestors or learns quickly how to select his food by using his brains, he will soon be extinct. A simple experiment with succeeding generations of mice or other short-lived animals will convince one of the outlook for man under the dietary customs of today.

There are five great classes of foods—carbohydrates, fats, proteins vitamins and minerals. Nature has packaged these foods in most marvelous ways. She has fastened a label to each package. Not a label we can read with our eyes, but a label we can read with our taste buds. Since we have only four tastes, there are only four labels. Yet with this mechanism, man came down through the ages very well. He got enough of the various food substances and in the right proportions to meet his needs.

Mostly within the last 150 years man has begun changing the labels. He takes the sweet label, for instance, from the sugar cane or beet and sticks it on watermelon rind or something else he would ordinarily not find good to eat. Or he may take the label itself and eat it. When he does this, of course, the purpose of the label is not being served. He suffers from the deficiencies of those tasteless things, vitamins, minerals, etc., which were intended to go with the label.

To further confuse his selective mechanism, man has learned to separate juices from fruits. He then drinks the juices. All because it is a little less messy than peeling the fruit and separating it from the seeds.

The physiological difficulty here is that when he drinks the juice, he uses the thirst center, when if he ate the fruit, he would use the hunger center of the brain.

The thirst center of the brain was made to work only on water. When we drink juices we will drink until thirst is satisfied, not until hunger is satisfied. In this way we are apt to get more at a time than we should have.

If we eat the fruit we are not apt to get an excess of this type of food. An orange or two will do us, but when drinking the juice, we may take the contents of a dozen oranges to satisfy our thirst.

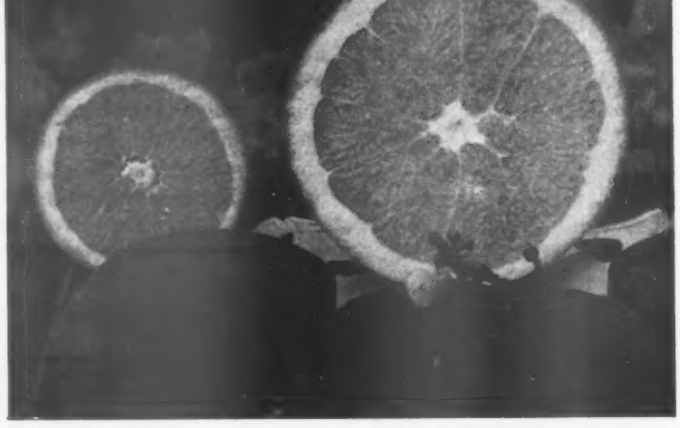
About ten percent of almost any fruit is sugar, the best kind of sugar, it is true, but even *it* can be used to excess. When this is done, it puts undue strain on the mechanism of the body which maintains the correct sugar level of the blood.

Again the acid-base balance of the body is a most important part of body chemistry. The multitude of chemical reactions which take place in the body depend in part on a critical pH or acid-base relationship. All fruits and juices affect this valuable relationship. When we eat fruit, the proper boss is in charge. If our pH is too high, we may not want the fruit at all. If we can use a little vitamin C and a slightly more alkaline blood, then we are hungry for the fruit. It tastes good to us and we will eat just about enough and no more to do the work.

This is not all theoretical. My work is in the field of body chemistry. We analyze thousands of bloods. The pH of the blood should be 7.4. We often find it more alkaline than that. 7.5 is twice as alkaline as 7.4, yet to find the blood 2, 3 or 4 times more alkaline than it should be is not uncommon. One of the bad results of too alkaline blood is the precipitation of calculus on teeth, yet this is but one of the many chemical processes which a too alkaline blood interferes with.

The moral of this article is, "Let nature work as it was intended to work." The consequences of drinking juices instead of eating the fruit are not as bad as they may seem, for our bodies are so wonderfully made that we have what engineers call a great safety factor. We can violate many rules with little consequence. But for those people who take pride in the things which they possess who like to get the greatest efficiency out of their machines, who treat their automobiles in such a manner that they get the utmost in efficiency, comfort and mileage; they will want to get the most in efficiency, comfort and mileage out of the bodies they live in, particularly as they cannot be turned in on a new model.

end



# CLAY AT RAB'S CORNER

# No Digging

*(We are indebted to Mr. V. Poliakoff, Rab's Corner, 39 Sherrard Park, Welwyn Garden City, Herts, for permission to reproduce these extracts from an address sent by him to be read to members of the Organic Gardening Club of Oakland, California, on July 15, 1949.)*

TEN years ago I knew nothing about organic cultivation, and little about the soil. Rab's Corner (Rab being one of my Afghan hounds) was a wilderness of brambles and bushes. Many years ago there was a farm hereabouts known as Starved Acres, and there is a legend that, in the blessed days of Queen Victoria, a sculptor whose name is today forgotten took clay from here for modelling the queen's bust. I bought the place because, being a busy London journalist, I wanted a house to get away to for quiet writing. My interest in gardening, I confess, was limited to getting a couple of men to clear away some of the bushes.

In 1939, the Government launched an appeal to people to grow more food. The appeal took the form of a poster which showed a foot, encased in a heavy shoe, pressing an immense spade into the ground. I decided to do my share, and my first move was to dig up my so-called lawn for potatoes. I found the work hard, very hard. Indeed, I wondered whether there was logic in this hard labour for producing a few potatoes.

Now Rab's Corner is situated on the edge of a wood of great Hertfordshire oaks more than a century old. Many of these giants have been swept away by the needs of wartime, but then they were standing in all their majesty. As I walked in that wood, the thought came to me again and yet again: *an oak like that needs more nourishment than a cabbage. Yet it does not dig. No one has dug here for a century at least. Yet the tree flourishes. How is that done?*

So, gradually, instead of looking upwards towards the green crowns far above me, I looked at the soil beneath my feet. I dug my toe into it. A few inches below the carpet of dead leaves and other organic matter I found my old enemy, the nasty, heavy clay of Hertfordshire. The carpet on the surface was less than a couple of inches thick. Was that all, for producing the nourishment of those majestic oaks? Unwillingly, I had to conclude that it *was* all. For the fibrous feeding-roots of the oak were spread horizontally very near the surface. The thought came to me: *If that is so, why should I not in my garden reproduce the top-soil as it existed in the wood?*

I made a pact with boys from the local school. Every Saturday afternoon, they were to come to tea at Rab's Corner—tea with buns and jam. Before getting his tea, each boy was to bring a sackful of oak-leaves, as much decayed as possible, to a heap in the garden. Quite soon I was able to carpet a large area with leaves nearly a foot deep; this I trampled in, watered, and even rolled tight. That is the way organic gardening started at Rab's Corner.

The no-digging method was the outcome of that rudimentary carpet. With it left on top of the clay soil, it was difficult to dig at all. So I stopped digging, because I could not do otherwise. That led me to discover that it is possible to sow and plant without turning the soil over at all. Indeed, I gradually came to the conclusion that upsetting the layering of the soil is a wasteful, and often an unhelpful, operation.

Hence the principles on which our cultivation is now strictly based.

*Rule* 1. The aim of cultivation is to produce a state of permanent and growing fertility. That is achieved by a continuous process of composting, but especially in autumn. The secret is not digging or no-digging, but the constant addition of well-composted matter to the surface humus.

*Rule* 2. No-digging is preferred because it saves labour and disturbance of soil layering. No compost is buried; it is left on the surface as a sheet, or heaped around plants. But soil aeration is practised; this eases the sickering of the compost into close union with the soil.

*Rule* 3. Compost-making is the principal operation, the ideal being 20 tons of ripe compost per acre a year, though with A1 materials this quantity can be reduced considerably.

*Rule* 4. When planning, think of fertility first and always. If fertility is right, the plants will be right. You cannot have it the other way round.

*Rule* 5. The use of artificial fertilizers is not allowed.

Bad compost is better than no compost at all. Mother Earth is generous and is ready to correct mistakes made by stupid and over-zealous humans. I know of at least twenty methods of making decent compost. At Rab's Corner, after ten years, we have sorted out four which suit us.

No. 1. *The Indore method* introduced by Sir Albert Howard. As, however, the different materials are not always obtained in the right proportions, we make intermediate heaps of each, in which fermentation starts, and draw from these for the main heap in the right proportions.

No. 2. *The Direct method,* i.e. the original plan of covering the soil with a thick carpet. This rots quickly in winter-time, but I do not think this method is profitable really and I am gradually abandoning it.

No. 3. *The Mobile Trench method.* In autumn, when leaves are abundant, we put old wire fencing round a plot some 30 feet long by 10 wide, tying it to iron rods to form a sort of basket. This we fill with leaves, without packing them tightly. When the heap is ready, we cut a trench across it right down to the soil, four feet from one end,

(*Continued on page* 60)

# GARDEN CALENDAR for MAY

By WILLIAM H. EYSTER, Ph.D.

May is the month of the unfolding of buds, the bursting forth of blossoms, and the germination of seeds of tender plants. The new green leaves may be regarded as the green lights to go ahead on all fronts in the garden.

*Flower Garden*:—Take time to prepare well the soil for the flower gardens. Work into the soil liberal amounts of compost (not fresh manure). For continuous bloom, make repeated plantings of your favorite flowers. Some plants do not like to be pruned, as asters, poppies, nicotianas, begonias, and fuchsias. In transplanting seedlings to the garden it is advisable to select a cool cloudy day rather than a warm, sunny one.

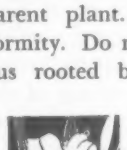
May is a good time to plant such lilies as regal, Japanese gold banded, and the showy lily. It is time also to transplant to the garden the rooted slips from dahlia roots. It is well to set the stakes at the time the slips are planted.

As soon as the tulips are out of bloom, break off the seed pods and allow the foliage to remain on the plant so that the plant may recover its normal vigor and store up food in the bulb for next year's growth. In that case take up the bulbs before they have completed their growth.

Chrysanthemum cuttings made by May 15 will finish in six-inch pots and make satisfactory house plants for fall. Some spring-blooming perennials can be induced to bloom a second time by cutting off the stems which have just finished blooming. Give the peonies a good dressing of compost as they are now forming the flowers which will open in late May or early June.

The amaryllis that flowered in early spring, like other spring flowering bulbiferous plants, must be allowed to develop the bulb for next year's flowers. Feed them twice a week with compost water, then as the leaves show signs of yellowing, dry them off gradually by turning the pots on their sides in a dry shaded place.

Begonias are excellent plants for bedding, particularly if all the plants are propagated asexually from a common parent plant. This will insure uniformity. Do not overlook the tuberous rooted begonias for



bedding. Fill a flat with a mixture of compost and sand and half bury the bulbs in this material. Water them once and shade them from the sun. Under favorable conditions they will show signs of growth and be ready to plant out in two or three weeks.

*Rose Garden*:—Roses may be freed of their winter protection. Examine your plants and be sure to remove any shoots that may be growing from the stock below the point at which it was budded. If large flowers are desired, all but the terminal buds should be removed as soon as they appear. Hybrid teas and hybrid perpetuals respond to budding; polyanthus and landscape roses need not be disbudded. Rose flowers should be cut early in the morning before any of the petals have unfolded.

*Shrubs and Trees*:—Prune maples as the buds are bursting and they will not bleed. All spring-blooming shrubs, as forsythia, lilac, and spiraea, should be pruned immediately after they have finished flowering. Prune evergreens by pinching out the growing tips of the stems. In pruning hedges, be sure that the base of the hedge is somewhat wider than the top.

*Vegetable Garden*:—Practically all vegetables which are regarded as *tender* may be set out in the garden this month. In doing this it may be well to take into consideration the last average date of killing frost for your particular region.

## THE WEST COAST

*Flower Garden*:—Succession sowings may be made of the seeds of California poppy, godetia, clarkia, Shirley poppy, and calendula to provide color in the garden during all the summer and far into the fall. Plan now to avoid a colorless and dead-looking summer garden. This can be avoided by planting summer bulbs and annuals as pompon dahlias, gladiolus, tuberous-rooted begonias, tigridia, summer-flowering hyacinths, and your choice of annuals. Be sure to include tithonia. Plant chrysanthemums out in beds that are now occupied by annuals which are about through blooming. By pinching out the upper three or four inches of chrysanthemum plants and rooting them in sand, you can greatly increase the number of your plants.

*Shrubs and Trees*:—Evergreen shrubs and such tropical plants as paper-plant, bamboo, elephant-ear, and bird-of-paradise may be planted in May. Broad-leaved evergreens as abelia, mahonia, acuba, English laurel, and photinia should be cut back to insure strong bushy plants. Lilacs prefer a somewhat alkaline soil and it may be necessary to give

them lime from time to time. Such flowering shrubs as rhododendrons, azaleas, deutzias, lilacs, mock orange, weigelia, hawthorn, viburnum, flowering crab, flowering cherry, and wisteria add gayety to the garden. These shrubs should be given heavy dressings of compost just before blooming, or as the buds are beginning to form. Remove old flowers as soon as they have faded.

### THE SOUTH

*Flower Garden*:—The flower garden is in full splendor and ready for the fullest enjoyment. Prepare the soil for hot weather by covering it with a plant mulch. As soon as the spring garden is finished, prepare the soil and plant the summer garden. Be sure to put all garden wastes in the compost heap. Now that your rich purple carpet of violets has changed to green, it is time to reset the plants for next year's spring garden of violets. Dahlias for fall bloom should be planted now. Sow hibiscus for summer blooms.

*Shrubs and Trees*:—Prune all spring-flowering shrubs. Transplant lantanas. Oleanders may be propagated by rooting cuttings in sand. The cuttings should be made from mature wood. In pruning oleanders, cut out the oldest and also the weakest stems, leaving the most vigorous stems to make more beautiful plants. May is also the time for moving palms.

### THE SOUTH WEST

*Flower Garden*:—Plant amaranthus, Australian pea vine, blue lace flower, calliopsis, annual and perennial climbers, cockscomb, cosmos, gaillardia, gypsophila, Mexican firebush, Hyacinth bean, marigolds, nicotiana portulaca, moonflower, nasturtium, morning glory, Shasta daisy, sunflower, verbena, vinca, and zinnia.

*Vegetable Garden*:—Vegetables that may be planted in May include beets, kale, melons, peanuts, pumpkin, sweet potato, and squash.

### THE LOWER SOUTH*

*Flower Garden*:—The May list of flowers is rather small compared to other months. Scarlet runner beans, cosmos, Shasta daisy, gaillardia, ornamental gourd, globe amaranth, helianthus, marigold, morning glory, petunia, portulaca, salvia, tithonia, verbena, periwinkle, zinnia, are recommended. Remember that when wishing to slip the various flowers that respond to this way of increasing your garden's beauty, you should insert the slips at the end of your garden rows. They seem to grow better in this way and also act as markers for the rows. By the time the vegetables are harvested, the slips are well rooted, and often are already blooming. If you have no vegetable garden, make a trench and fill with compost, then cover with good soil and insert the slips.

*Vegetable Garden*:—There is still time to plant corn, if the black Mexican (or black June) variety is used. To combat the corn ear worm, take your choice among the various favorites. One of the native preferences, and easily come by, is fine sand, which is said to irritate the worms. One that has been used with good success is mineral oil, the kind used internally. It can be applied with the tip of an ordinary feather. Castor oil is also good. Plant also pole beans, collard, mustard, okra, pumpkin, New Zealand spinach.

*Trees and Shrubs*:—In selecting trees for shade or beauty, be sure that your choice does not include such kinds as maple, oak, Australian pine, if near a garden of any kind. The oak sheds quantities of leaves and acorns, the latter springing up into trees all over the place, while the other two send out long roots that steal the fertilizer meant for other plants. The sweet gum is a beautiful tree that puts its roots down and allows cultivation of other things fairly close.

* Edwin H. Abrams, St. Cloud, Florida

## THRESHING and HOME FLOUR MILLS

(*Continued from page* 25)

too, is a steel grist mill which sells for about $10.00.

Not so long ago a distant relative from Chicago dropped in and revealed he had been grinding his own flour for twenty years on a simple

hand grist mill, such as is used by farmers for grinding chicken and cow feed. We used a neighbor's motorized grist mill for a while and then got a hand grist mill from Sears for about $7.00. These mills are not intended for grinding flour and no such claim is made for them, but by setting them as fine as they will go and sifting out the coarsest bran, a satisfactory rough flour may be obtained. We soon got tired of cranking ours by hand so we hitched it to a one-quarter horsepower electric motor. If you do this, be sure to put a *big* pulley wheel on the mill and a small pulley on the motor so the mill will not run too fast.

All these mills except the small Lee mill are adjustable so that cracked grain as well as flour may be obtained.

Someone made the remark that flour is as perishable as milk, so there's every advantage to having your own mill and grinding your own grain as you use it. To obtain maximum nutritional value and finest flavor use your flour before it is a week old and grind only from organically-grown grains which you can raise in your own garden or buy from organic farmers.

# Seminar on Organic Fertilizers

By WM. H. EYSTER, Ph.D.

*Q.* What are organic fertilizers?

*A.* An organic fertilizer is one which is made from plant and animal residues. These may be fresh residues, or residues which have accumulated and have been preserved for long periods of time, as peat, marl, and limestone.

*Q.* What is a natural fertilizer?

*A.* A natural fertilizer is one made of some natural earth product which may be processed mechanically but is not treated with acids or other substances to increase its solubility. Phosphate rock, finely pulverized, is a natural fertilizer.

*Q.* What is usually meant by an artificial fertilizer or, more commonly, a chemical fertilizer?

*A.* An artificial chemical fertilizer is one which is made of some earth product and a strong acid. As an example may be mentioned superphosphate which is made by treating phosphate rock with sulphuric acid. A hundred pound bag of superphosphate includes 50 pounds of phosphate rock and 50 pounds of sulphuric acid.

*Q.* What is meant by a raw organic fertilizer?

*A.* A raw organic fertilizer is one that is made of raw (unfermented) plant and animal residues. Or it may be made of raw organic matter to which have been added such materials as pulverized phosphate rock, potash rock, oyster shell floor, and seaweed which contains most of the elements which are apt to have been leached out of the soil.

*Q.* Can a raw organic fertilizer be used exactly like compost?

*A.* No. A raw organic fertilizer should be placed on the soil some time before a crop is to be planted. It can be put on the soil as a winter mulch where it will be fairly well composted by spring. Or it should be worked into the soil lightly some months before planting time. During the growing season it could be applied on the top of the soil as a mulch.

*Q.* Are cooked and roasted bones of value to the soil? If so, how should they be applied?

*A.* Cooked and roasted bones are of value to the soil, but must be ground up instead of being composted whole. This material should not be applied to the soil without being broken down. If you have a grinding machine, you can utilize these bones; otherwise, it might be more economical to purchase the bonemeal.

*Q.* Would you recommend using a cheap black-strap molasses in the irrigating water as a source of organic matter? It is the same molasses that is being used to feed cattle. The molasses appears to contain many trace elements. Would the molasses be helpful to the soil?

*A.* We would be slow to recommend adding large amounts of molasses to the soil, as it must be regarded as an unfermented material. When raw organic materials are added to the soil, the bacteria which break them down use the available minerals in the soil and may create temporary deficiencies in the soil and thus interfere with the proper development of the crop plants. A small amount of this material for trace elements might be added with the winter mulch in late summer or fall or to the materials in the compost heap.

*Q.* What is the value of bonemeal in the compost heap or in the soil?

*A.* Bonemeal is used especially where phosphorus is desired, as its phosphorus content is very high. Bonemeal contains only about 1 percent nitrogen. If dried blood is used along with bonemeal, a good fertilizer is at hand. It might be better to add the bonemeal to the compost heap, or to the winter mulch in late summer rather than to the soil at planting time. This will allow time for breaking down the bonemeal to forms available to plants.

*Q.* Do you recommend dried blood or bloodmeal as an organic fertilizer?

*A.* Dried blood is an excellent material for making compost and for enriching the soil. It contains about 12 percent nitrogen and from 1 to 5 percent phosphate. It contains other nutrients as well.

*Q.* Do you regard kiln dust a suitable organic fertilizer?

*A.* Not if it contains appreciable amounts of sulphur. Otherwise it would seem to be an excellent soil builder as it contains the oxides of quite a number of plant nutrient elements.

*Q.* Of what value is leather dust as an organic fertilizer?

*A.* Leather dust is a good, compostable material. Its chemical composition varies according to its origin and the nature of the processing to which it has been subjected. The nitrogen content varies from 5.5 to 12 percent. It also contains considerable amounts of phosphorus, since the ash contains from 2 to 3 percent phosphorus. In the compost heap, leather dust develops a rather high temperature.

*Q.* Can horn dust be used as an organic fertilizer?

*A.* Yes. Horn dust contains from 10 to 15 percent nitrogen in available forms and a relatively high percentage of phosphorus. Horndust should be applied at the rate of from 3 to 5 pounds per 100 square feet of soil. It will not burn the plants and tends to lighten and loosen the soil.

*Q.* Are such materials as bone-

meal and Hershey's Ko-K-O suitable for the bulb bed?

*A.* These are raw organic materials, and should be composted before being used in the bulb bed, or should be used in the autumn after the bulbs have become dormant. During the autumn and winter months, these raw organic materials will break down and yield humus and nutrient elements for the bulbs the following spring.

*Q.* What fertilizing values has the sludge of a city disposal plant?

*A.* The analysis of the sewage sludge of Allentown, Pa. may be given as a typical sewage. This sewage contains 59.95 percent water, 19.53 percent organic matter, and 21.52 percent ash. Its N-P-K- formula is 3.12 nitrogen—0.11 phosphorus —0.035 potassium. It also contains trace elements. For instance, it contains 0.00015 percent copper.

*Q.* Why are powdered rocks regarded as such valuable soil builders?

*A.* Powdered rocks contain a large number of the elements which are absolutely essential for normal and healthy plant growth. Some of these, the trace elements, are especially necessary to normal, healthy, disease-free, and pest-free plants. The point is that these powdered natural rocks contain the elements which have been leached out of our agricultural soils during the past 50 to 100 years of modern, although not too intelligent, farming and gardening.

*Q.* What plant nutrients are contained in phosphate rock?

*A.* The available phosphate rocks contain from 30 to 40 percent phosphoric acid, from 30 to 50 percent lime; small amounts of such minor elements as iron, sulphur, and magnesium; and as many as 20 or more trace elements.

*Q.* What rocks contain potash in natural form?

*A.* The most common potash-rocks are glauconite or "green earth," and granites. These rocks contain from 3 to 15 percent potash, small amounts of the other major and minor elements; and a long list of trace elements.

*Q.* In the new method, various grains have been suggested as organic fertilizers. What fertilizer value have some of the most common grains?

*A.* The mineral content of some common seeds and grains are given in the accompanying table.

These seeds (ground up) should follow the rules applying to raw organic matter.

*Q.* What fertilizer values have the leaves of our common trees?

*A.* Many trees are deep rooted and absorb minerals from the lower soil levels. These minerals are translocated into the leaves and dropped in the fall. In this way nature replenishes many of the nutrient elements which are leached out of the surface layers of the soil. The nitrogen, phosphoric acid, and potash content of some common leaves are given in the following table:

| Materials | Nitrogen | Phosphoric Acid $P_2O_5$ | Potash $K_2O$ |
|---|---|---|---|
| Peach Leaves | .9 % | .15% | .60% |
| Oak Leaves | .8 " | .35 " | .15 " |
| Grape Leaves | .45 " | .1 " | .35 " |
| Pear Leaves | .7 " | .12 " | .4 " |
| Apple Leaves | 1.00 " | .15 " | .35 " |
| Cherry Leaves | .6 " | .11 " | .72 " |
| Raspberry Leaves | 1.35 " | .27 " | .63 " |
| Garden Pea Vines | .25 " | .05 " | .7 " |
| Red Clover, Green | .55 " | .13 " | .5 " |
| Vetch Hay | 2.8 " | .75 " | 2.3 " |
| Alfalfa Hay | 2.45 " | .5 " | 2.10 " |
| Corn Stalks | .75 " | .40 " | .9 " |
| Immature Grass | 1.00 " | .5 " | 1.2 " |

*Q.* What are the N-P-K formulae of the common organic fertilizers which are available at fertilizer plants or seed stores?

A. The N-P-K content of some of the more common organic fertilizing materials are given in the table on page 50.

## MINERAL CONTENT OF SEEDS AND GRAINS

| SEED | Calcium % | Phosphorus % | Potassium % | Sodium % | Chlorine % | Sulphur % | Magnesium % | Iron % | Manganese Mg. per lb. | Copper Mg. per lb. |
|---|---|---|---|---|---|---|---|---|---|---|
| Barley | 0.06 | 0.37 | 0.49 | 0.06 | 0.15 | 0.15 | 0.13 | 0.0008 | 8.0 | 5.8 |
| Beans, field | 0.15 | 0.57 | 1.27 | 0.09 | 0.04 | 0.23 | 0.17 | 0.0012 | 8.4 | 4.5 |
| Beans, Lima | 0.09 | 0.37 | 1.70 | 0.03 | 0.03 | 0.20 | 0.18 | 0.010 | 7.3 | 3.7 |
| Corn, dent | 0.02 | 0.28 | 0.28 | 0.01 | 0.06 | 0.12 | 0.10 | 0.003 | 2.6 | 1.8 |
| Cottonseed | 0.14 | 0.70 | 1.11 | 0.29 | | 0.24 | 0.32 | 0.014 | 5.5 | 22.7 |
| Cow pea seed | 0.11 | 0.46 | 1.30 | 0.27 | 0.04 | 0.25 | 0.26 | 0.036 | 18.2 | 2.0 |
| Flax seed | 0.26 | 0.55 | 0.59 | | | 0.06 | 0.40 | 0.009 | 26.0 | |
| Kafir grain | 0.02 | 0.31 | 0.34 | 0.06 | 0.10 | 0.16 | 0.15 | 0.001 | 7.4 | 3.0 |
| Millet seed | 0.05 | 0.30 | 0.43 | | | | 0.16 | | | |
| Milo grain | 0.03 | 0.28 | 0.36 | | | | 0.22 | 0.005 | 5.9 | 7.8 |
| Oats kernels | 0.08 | 0.46 | 0.39 | 0.05 | 0.09 | 0.20 | 0.15 | 0.010 | 16.8 | 3.6 |
| Oat grain | 0.09 | 0.34 | 0.43 | 0.09 | 0.12 | 0.21 | 0.14 | 0.007 | 19.9 | 3.8 |
| Peanuts—No Hulls | 0.06 | 0.44 | 0.54 | 0.56 | 0.02 | 0.25 | 0.18 | | | |
| Rice, brown | 0.04 | 0.25 | | | 0.08 | | | 0.001 | 9.2 | 1.2 |
| Rice, grain | 0.08 | 0.32 | 0.34 | | 0.09 | | 0.14 | | | |
| Rye Grain | 0.10 | 0.33 | 0.47 | 0.04 | 0.02 | 0.16 | 0.12 | 0.008 | 37.0 | 3.4 |
| Soy bean seed | 0.25 | 0.59 | 1.50 | 0.22 | 0.03 | 0.22 | 0.28 | 0.008 | 13.4 | 7.1 |
| Sunflower seed | | 0.55 | 0.66 | | | | | 0.003 | 9.8 | |
| Sunflower seed, Hulled | 0.20 | 0.96 | 0.92 | 0.03 | 0.01 | 0.02 | 0.38 | | | |
| Wheat grain | 0.04 | 0.39 | 0.42 | 0.06 | 0.08 | 0.20 | 0.14 | 0.006 | 19.9 | 3.7 |

## PERCENTAGE COMPOSITION OF VARIOUS MATERIALS

| Material | Nitrogen | Phosphoric Acid | Potash |
|---|---|---|---|
| Brewer's grains (wet) | .90 | .50 | .05 |
| Ground bone, burned | | 34.70 | |
| Cocoa shell dust | 1.04 | 1.49 | 2.71 |
| Coffee grounds (dried) | 1.99 | .36 | .67 |
| Cottonseed | 3.15 | 1.25 | 1.15 |
| Fish scrap (red snapper) | 7.76 | 13.00 | .38 |
| Greensand | | 1.00 — 2 | 5.00 |
| Hoofmeal and horn dust | 10.00 — 15 | 1.50 — 2 | |
| Incinerator ash | .24 | 5.15 | 2.33 |
| King crab (dried and ground) | 10.00 | .26 | .06 |
| Lobster shells | 4.60 | 3.52 | |
| Molasses (residue) | .70 | | 5.32 |
| Seaweed (Atlantic City) | 1.68 | .75 | 4.93 |
| Starfish | 1.80 | .20 | .25 |
| Wood ashes | | 1.00 — 2 | 4.00 — 10 |
| Bloodmeal | 15.00 | 1.30 | .70 |
| Bonemeal | 4.00 | 21.00 | .20 |
| Cottonseed meal | 6.50 | 1.50 | 1.70 |
| Tankage | 6.00 | 8.00 | |

*Q.* Can you suggest mixtures of organic fertilizing materials which will have certain N-P-K formulae?

*A.* By mixing the organic materials of known compositions, it is possible to make up mixtures of any desired formula, as indicated below:

| Mixtures | N–P–K Formula |
|---|---|
| 2 parts cottonseed meal<br>2 parts fish meal<br>1 part bone meal<br>2 parts dried blood<br>2 parts wood ashes<br>or greensand | 12–12–5 |
| 1 part cottonseed meal<br>1 part fish meal<br>2 parts bonemeal<br>2 parts wood ashes<br>or greensand | 5–12–5 |
| 1 part tankage<br>1 part bonemeal<br>1 part wood ashes<br>or greensand | 1– 3–1 |
| 4 parts dried blood<br>3 parts bonemeal | 24–23–1 |
| 1 part bloodmeal<br>1 part bonemeal<br>1 part greensand | 5– 6–2 |

*Q.* Please advise whether bonemeal would be a suitable substitute for cow manure in making compost when fruit and vegetable cuttings and some dried leaves are used. How much bonemeal should be used? Would dried blood and bonemeal be more desirable?

*A.* Bonemeal alone will not be enough as a substitute for manure because it does not contain sufficient amounts of nitrogen If you can get horndust, bloodmeal or dried king crab, you would have all the nitrogen necessary. A hundred pound bag of horn dust would give you about as much nitrogen as a thousand pounds of manure. Dried blood or bloodmeal would give you about as much.

*Q.* What would you consider a good organic fertilizer for roses?

*A.* A mixture which has been found to stimulate roses to such vigorous growth and stamina as to be relatively free from insect pests and disease consists of the following:

2 parts fishmeal
1 part cottonseed meal
1 part phosphate rock
2 parts dried blood
1 part wood ashes
1 part greensand

*Q.* Could these organic fertilizers be added to the soil immediately before planting seeds and plants?

*A.* Since these organic fertilizers are made up of raw organic materials, they should be added to the soil a sufficient time in advance of planting to enable the soil organisms to convert them into compost. This can be accomplished by adding them to the soil in the fall with the winter mulch. Otherwise, the mixture should be applied on the top of the soil and covered by a mulch.

## GADGET FOR THE GARDEN

### *Jug Greenhouses*

The jug house is wonderful, and can be made from a gallon glass jug in the following manner:

1. Obtain a board wide enough for the jug, as shown in the illustration.

2. Drive in the board 6 six-penny nails in the form of a circle so that the old toaster element rests on the heads of the nails and touches the sides of the jug near the bottom.

3. Use an old toaster element for heating the jug, as shown in the drawing.

4. Use one foot of drop cord connected to each end of the toaster heating element.

5. The other ends of the drop cords are attached to a male plug or to a switch as shown in the illustration.

6. A regular light cord with socket in which to plug the male element attached to the cord and element around the glass jug.

An old but usable toaster element can be obtained from your local electrical repair shop.

7. Remove the glass bottle from the hot coil, and touch the level heated by the coil with an object dipped into cold water. The bottom should crack out at this level.

Norman Spangler,
McClure, Ohio.

# HINTS for the FLOWER GARDEN

### QUITE CONTRARY

If Heavenly Blue morning glories are wanted, nick the seeds to have them germinate quickly and give them poor soil. In good soil you get leaves and few, if any flowers.

—o—

### AIR-CONDITIONED ROOTS

Mulch the surafce under tuberous-rooted begonias in the garden with an inch or two of compost to aid in keeping the roots cool.

—o—

### PRIME PEONIES

The gardener who desires large peony blooms should pick off the side buds when they are very small, leaving the terminal bud on each stalk.

—o—

### EASTER LILIES

Forced Easter Lilies may be planted in the garden when danger of frost is past. So treated, they may bloom again in the fall.

—o—

### AZALEAS

The potted azaleas acquired at Easter are more likely to thrive as house plants than those obtained at Christmas, because they have not been unduly forced and because it is possible to place them outdoors within a few weeks, or just as soon as danger of frost is past.

—o—

### GARDEN ATHLETES?

Support is needed for sweet peas before the vines grow so tall they fall over. Brush is one of the best materials to use. Sometimes a network of strings, supported by posts is used. Old tennis nets are excellent!

### COMING ATTRACTION

Irises should be given an application of bonemeal now. Work it around the roots with a trowel and thoroughly soak it into the soil. The results will be seen next spring.

—o—

### MEMO ON MUMS

Chrysanthemums can be made into bushy plants by pinching. Pinch plants judiciously until the middle of June and then allow the shoots to grow. Bushy plants bloom best.

—o—

### LILAC PRUNING

Cut sprays of lilacs freely but with consideration for the shape of the plants when the branches have been removed. This pruning is practically all that lilacs need.

—o—

### BRIGHTER GARDENS

Keep the faded flowers picked from the pansies to encourage new blooms.

—o—

### HINT TO HOUSEWIVES

If branches of double flowering Baby's Breath (Gypsophila), are cut before they are fully opened, they can be dried and kept for winter bouquets.

—o—

### PAPER POTS

Paper pots can be made by folding strips of paper about and over a block of wood fastened to a bench, and securing the folded end with a pin. Tin cans with a hole punched in the bottom for drainage may serve as plant receptacles, though it is sometimes difficult to release the ball of soil. A dent on the side may act as a brake to easy extraction.

### "COMIN' THRU THE RYE"

Pansies, which germinate badly as a rule, will seed almost ninety per cent if planted next to ordinary rye. Growth hormones received from the rye roots speed germination.

—o—

### HEALTH VS. BEAUTY

Generally speaking, hyacinths do best in a sunny, open location. The red color, however, does not show its full beauty unless it is protected from the midday sunshine and cold winds. In full sunlight, or when unprotected, red flowers will blanch and lose most of their beauty.

—o—

### WATER MAGIC

The top of a pineapple, planted in a pint jar of water, will soon make an exotic and most attractive palm plant.

—o—

### A CORRECTED FALLACY

A popular fallacy is the idea that because a soil is poor, an extra heavy seeding will insure a good lawn. The results are the opposite because the poorer a soil, the fewer plants it will support.

—o—

### "DAMPING OFF" REDUCTION

A dry surface soil is an aid in reducing losses from "damping off". If plants are watered when the temperature is rising, as the old rule advises, this condition of dryness will be obtained. If a good application is given in the morning, the surface soil and foliage will be dry by night.

—o—

### SPACE FILLER

A small space in the garden should be planted with some of the sweet-scented herbs which are decorative as well as aromatic.

—o—

### BRIDE'S BOUQUET

Lily-of-the-Valley thrives in a well-composted soil. This plant grows well in the shade, but plants in a sunny location will bloom earlier. It is a bad spreader, the plants should be divided occasionally or the flowers will become small and few in number.

### SEED DISTRIBUTION

In seeding the coldframe or flat, a clean edge is cut at the end of the seed packet. A rough edge interferes with the free flow of the seed. The paper may be tapped lightly with a pencil or a shaking motion lengthwise the row will make more uniform distribution of the seed.

—o—

### CLUES FOR CARROTTING

Carrots take quite long to germinate from seed. Often, it is desirable to do some work in the garden near the rows before they make their appearance. A good way to mark the rows is to mix a few seeds of turnip or radish with the carrot seed. These quick germinating seeds clearly indicate the position of the row for early cultivation.

—o—

### SQUASH PLANTED IN CORN

Robert Carclus, vegetable plant breeder at Michigan State College, has found that squash nearly always yield better when planted in corn. Although no definite reason has been given, one theory is that the corn pollen may contain certain hormones that make the squash grow better and make higher yields. Another is that the corn plants break up the movement of air around squash vines, and that this results in more favorable environmental conditions for bee pollination. Experiments have not been performed on other vine vegetables, such as pumpkins, cucumbers, melons, and the like, but it is reasonable to believe that this same condition may hold true.

—o—

### HOT WEATHER VEGETABLE

New Zealand spinach is a good vegetable for dry, hot weather and can be cut several times during the season.

### LOWER CABBAGE CASUALTIES

Nearly mature cabbage may be kept from bursting by cultivating the shallow rooted plants thus pruning the surface roots. Occasional twisting of the plants accomplishes this same purpose. A sudden absorption of water after a period of dryness is also thought to be a factor causing the heads to burst.

—o—

### "A ROSE BY ANY OTHER NAME . . ."

*A. Schoenoprasum Chives.* This useful salad plant makes neat clumps of grass-like leaves and is not out of place in the perennial border. The flowers are rose-purple, and quite attractive.

—o—

### EXCEPTION TO THE RULE

An exception to the early planting rule is found in Chinese Cabbage, which will almost always run to seed if started before the middle of May.

—o—

### TRANSPLANTING TIP

Turnips, Kohlrabi, and Chinese cabbage often grow faster when they have been transplanted than when left in the original rows. If transplanting is to be done successfully, however, the roots must not be allowed to dry out.

—o—

### NEW LEASE ON LIFE

On land that is likely to bake or form a crust it may be desirable to sprout the seeds previously between layers of moist cloth. This seed is planted one-half inch deep as soon as the white sprouts begin to show. Thus the seedlings can get above the surface before a crust forms or weeds get a start.

### TAKEN STRAIGHT

The Globe or French Artichoke, has a delicate, nutty flavor which is very delicious, but it is a curious fact that it does not go with certain beverages. Tea and most wines lose their flavor entirely when taken with artichokes.

—o—

### PROTECTION FROM CUTWORMS

Plants may be protected from attack of cutworms by surrounding the stem with a collar of thin cardboard, which is anchored in place by extending an inch into the soil.

—o—

### SPACE SAVER

Overlapping crops is a great space saver in the home garden. As the pods on early peas are beginning to develop, a few vines may be pulled at eight foot intervals in the row and winter squash seeded in these areas. Spinach drilled in twelve inch rows will be well developed by the time for tomato planting. A few spinach plants may be removed at proper intervals to make way for the tomato plants.

—o—

### TIPS FOR TOMATOES

Training tomato plants up a stake or trellis by pinching out all but one or two of the laterals increases the early yield and gives larger, cleaner fruit.

—o—

### INCREASE YOUR CUCUMBERS

Seeds or plants of cucumber may be set out a little ahead of the normal time and covered with a paraffined or oiled paper protector, or a layer of mulch may be used. Rapid germination will be obtained.

—o—

### SEGREGATING CROPS

It is well to have the crops which are rather tall or spreading in their development on one side so that they will not shade or overrun the others. Sweet corn, pole beans, and the vine crops are of this nature. If the rows run east and west, then these may well be to the northern side. If the rows are north and south in their direction, it is best to have the tall crops on the east side.

## *Insects Are Their Meat*

(*Continued from page* 23)

attract the Phoebe, and several placed in the orchard will usually guarantee the presence of at least one pair.

In voice, the Wood Pewee seems to be in a sad state of mind, for its call resembles that of a faint human sigh. Aside from this fact however, it is a hustler when it comes to catching flies and other insects on the wing. Unlike the Phoebe, it is a rather shy bird and builds its nest in the deepest part of the forest where it is assured of complete privacy. If any intruders are about, it will refuse to go to its nest, but will perch nearby and watch until all danger is past; then it will cautiously enter the nest. It stands up for its own rights and the pesky red squirrel has learned to avoid it.

The animal food of the Wood Pewee amounts to ninety-nine per cent, the remaining one per cent being vegetable. On its daily diet are included the plum curculio, corn weevil, rice weevil, cloverleaf weevil, robber-flies, tachina flies, and long-legged crane flies. At times, some syrphus flies are also eaten. Tachina and syrphus flies are useful species, but the others and the majority of flies are decided pests and much credit goes to the Wood Pewee for the reduction of their numbers. Various parasitic species of bees and wasps are taken by all flycatchers and the Wood Pewee eats more than the rest; however, since the good that it accomplishes in destroying the other harmful insects more than makes up for this habit, the bird should never be condemned. Tree-hoppers, leaf-hoppers, negro-bugs, stinkbugs, squash bugs, assassin bugs, and water bugs which have no economic value are also caught and the Wood Pewee is decidedly a fine neighbor. This flycatcher inhabits eastern and central United States and its general color is olive above, and grayish-white to yellowish-white below. Its size is six and one-quarter inches.

Found almost everywhere east of the Rocky mountains, the Least flycatcher, a small species of five inches plus, acquires its name from its size. Brownish-olive is the color of its upper parts, and its lower parts are of a whitish hue. It has been nicknamed "chebec" because its calls resembles this word. It is quite numerous in its territory and this is a fact to be appreciated by the farmer and the horticulturists, for it eats no grain or fruit. Like its relative the Phoebe, the Least flycatcher seems to welcome civilization and it very often builds on the limbs of trees close to a house or barn. It also has a particular liking for orchards and swampy meadows where it spends a great deal of its time hunting various harmful insects.

Despite the fact that the Least flycatcher is the smallest of our common flycatchers, its bill of fare includes as many, if not more of the worst of the insects. The following make up a daily meal; squash bugs, cotton boll-weevils, cucumber beetles, clover weevils, plum curculios, moths of numerous kinds, and a variety of caterpillars. This bird deserves a vote of thanks from every farmer for its efforts toward the control of insects.

The flycatchers are hard at work from the time of their arrival in the early spring to late autumn. No field, forest, orchard or garden escapes their eye and the millions of stagnant pools of water in which untold numbers of insects breed are visited every day by them. The economic value of these birds is the concern of everyone, especially those directly connected with agriculture, and their presence in the city as well as the country should be encouraged. By understanding their importance to mankind, the farmer recognizes a certain guarantee against the ravages of all types of insects. Plans for homemade nesting boxes can be obtained from the National Association of Audubon Societies and will prove a worthwhile investment for all.

The flycatchers deserve an honorable mention on the long list of our insectivorous birds.

TITANS OF THE SOIL—Great Builders of Agriculture, by Edward Jerome Dies. (The University of North Carolina Press 1949 $3.50)

In the creation of America's magnificent agricultural empire, hundreds of men made monumental contributions which helped to reduce hunger and lift the burden of drudgery. In this book are brought together for the first time the swiftly moving stories of the lives and works of seventeen of these men—statesmen, scientists, inventors, and explorers. In these lives the author believes that he sees, not the gloomy picture of starvation through overpopulation as presented by recent prophets, but a bright future of plenty through scientific agricultural expansion. The author takes his readers to the fields of George Washington and Thomas Jefferson who fully recognized the evils of soil erosion. Here are fascinating stories of cotton and corn and wheat as seen in the lives of Whitney, Shull, and Carleton; given also are the contributions of Edmund Ruffin, Johnson, Atwater, Babcock, Smith, Wiley, John Deere and McCormick. Little-known men —Watson, Ellsworth, Morrill, and Knapp are lifted from the past and their deeds made to shine in the unending crusade for a better land.

DIAGNOSTIC TECHNIQUES FOR SOILS AND CROPS by Firman E. Bear *et al.* (The American Potash Institute, Washington 6, D. C. 1948 $2.00)

Since the beginning of modern agriculture, one of the chief problems has been the determination of the fertilizer needs of the soil. At first total chemical analysis was used. Later, quantitative and rapid soil and plant tests came into favor. More recently it has been found that biological processes are also taking place in the soil and must also be considered. Visual diagnoses employing indicator crops for the usual nutrient deficiencies have been evolved. This book contains what is now known about diagnosing soil and crop for optimum production. The book is well illustrated with black and white photographs and contains four colored plates. Each chapter has a goodly number of selected references. Included is an appendix which gives a review of literature summarizing visual symptoms of deficiency on plants for each element. Cloth bound with 308 pages.

EARTH ABIDES by George R. Stewart (Random House, Inc., Publishers, 457 Madison Avenue, New York, New York. 1949 $3.00)

This is an imaginary story of the earth's surface as it would appear if nearly all the human race were wiped out instantly and without warning, while plants, animals, and the handiwork of man continue as their functional capacities allow. Such a

(*Continued to page* 55)

For your garden's sake IRI-GATE

With The New IRI-GATOR

Make your garden more beautiful by scientifically watering where it does the most good—AT THE ROOTS. Recommended by leading horticulturists, the IRI-GATOR changes destructive water pressure into a gentle, penetrating flow which gives deep-root watering without soil erosion or plant damage. No wet leaves to invite disease. Sturdy, rust-proof, fits all garden hoses. *Tested and approved by Men's Garden Clubs of America.* 100% guaranteed. Order yours today!

De Luxe Model—Red, green, or yellow anodized aluminum—$1.50 postpaid

$1.00 POSTPAID

THOMAS MANUFACTURING CO.
2320 E. Monte Vista Box OG Tucson, Ariz.
Quantity Prices to Garden Clubs & Shops

BEFORE YOU BUY -SMALL- ANY TRACTOR-

SEE THE POWERFUL 5-HP GRAVELY—THE WORLD'S FINEST YET MOST MODERATELY PRICED GARDEN TRACTOR... COMPLETE LINE OF EXCLUSIVELY DESIGNED POWER TOOLS FOR EVERY GARDEN, LAWN AND FIELD JOB.

WRITE FOR FREE CATALOG

GRAVELY TRACTOR

FIELD TESTED FOR 27 YEARS

GRAVELY MOTOR PLOW & CULTIVATOR CO.
BOX 548 DUNBAR, W. VA.

Holland Tulip Farm

EASILY GROWN DESIGNS

Initials - Diamonds - Ovals

WRITE FOR COLOR CATALOG LISTING OVER 250 VARIETIES TULIPS
DAFFODILS
HYACINTHS

Van Bragt Bros

R. R. 4 DEPT. B HOLLAND, MICH.

IRISES and DAYLILIES

Best New and Old Varieties
Reduced Prices — Free Catalog

EDENWALD GARDENS
Dept. O Vincennes, Ind.

STURDY HARDY PERENNIALS

Strong, well-rooted plants, packed to carry safely coast to coast, and then live, thrive and flower. Hundreds of kinds, unusual bulbs and hardy plants, in our New illustrated Catalog. Ask for your copy.

REX. D. PEARCE
Moorestown Dept. D New Jersey

## Colonial House and Garden Symposium

### ALEXANDER CRAIG GARDEN
### Williamsburg, Virginia

AT various times during the 18th century this lot was occupied by tavernkeepers (1716) and perukemakers (1736). Finally in 1771, Alexander Craig, the "city sadler", came into possession. There is mention of gardens and numerous outbuildings in the recorded deeds.

This is an example of a city lot layout in which the pleasure garden has been developed at one side of the scheme. The small box edged beds, topiary accents, hedges and bulb plantings are features. Directly at the rear of the house is the kitchen with its paved work area and covered well. The kitchen garden beyond is laid out in a series of square beds. The central brick walk was discovered by archeological excavation and restored to its original appearance. The use of fruit trees in the kitchen garden is characteristic. Here we have peach, persimmon, fig and elderberry. The paddock with stable and chair house opens out to the rear street.

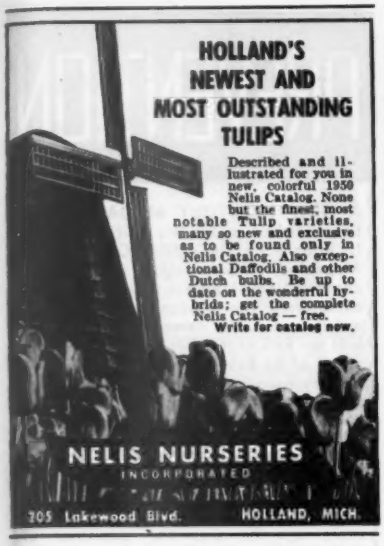
Note the use in this garden of four sweetbay magnolia, as accents in the parterre garden, the mountain ash near the kitchen and the persimmon as border planting for the kitchen garden.

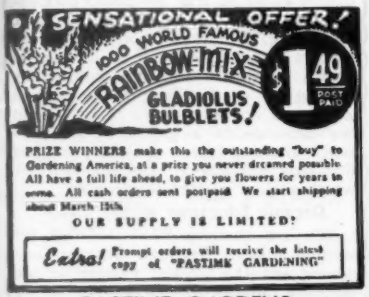
Buxus sempervirens
—Truedwarf
—Truetree
Carpinus caroliniana
Diospyros virginiana
Common Box (Hedge and Topiary)
American Hornbeam (Pleached Arbor)
Common Persimmon

A native fast growing tree with good foliage and edible fruit persisting during fall and winter months.

Magnolia grandiflora
Magnolia virginiana
Sorbus americana
Southern Magnolia
Sweetbay Magnolia
American Mountainash

A small native tree with clusters of white flowers followed by showy red berries in the autumn.


HOLLAND'S
NEWEST AND
MOST OUTSTANDING
TULIPS
Described and illustrated for you in new, colorful 1950 Nelis Catalog. None but the finest, most notable Tulip varieties, many so new and exclusive as to be found only in Nelis Catalog. Also exceptional Daffodils and other Dutch bulbs. Be up to date on the wonderful hybrids; get the complete Nelis Catalog — free.
Write for catalog now.
NELIS NURSERIES
INCORPORATED
205 Lakewood Blvd.
HOLLAND, MICH.


SENSATIONAL OFFER!
1000 WORLD FAMOUS
RAINBOW MIX
GLADIOLUS
BULBLETS!
$1.49 POST PAID
PRIZE WINNERS make this the outstanding "buy" to Gardening America, at a price you never dreamed possible. All have a full life ahead, to give you flowers for years to come. All cash orders sent postpaid. We start shipping about March 15th
OUR SUPPLY IS LIMITED!
Extra! Prompt orders will receive the latest copy of "PASTIME GARDENING"

PASTIME GARDENS
5950 Shuman, Garden City, Mich.

Most Informative—All Inclusive

**IRIS CATALOG**

*Brimful of Information Needed by IRIS LOVERS and HYBRIDIZERS*

**RARE and UNUSUAL SPECIES**
**NEWEST COLORS and HYBRIDS**
**IRIS for YEAR ROUND BLOOM**

*Most Novel IRIS CATALOG published*
*Send 10c TODAY to Cover Mailing*

**RAINBOW Hybridizing GARDENS**
Dept. O-5 PLACERVILLE, CALIF.

**YOU'LL BE SURPRISED HOW MUCH YOU CAN DO WITH . . .**
**FRONT MOUNTED**

See what you're doing...and couple up such tools as you need to do the job...accurately and with absolute control...2½ HP 4 cycle engine...3 forward speeds...semi-automatic...free-wheeling. Rotary tiller adjustable 10" to 16" with patented tines. Write for complete details.

QUICK COUPLING POWER TOOLS

**ARIENS CO. BRILLION, WIS.**


## BOOKS

(*Cont. from page* 53)

situation could be created if a lethal disease or a super bomb should kill all but a few of the human species. How would the survivors accommodate themselves to this new and unforeseen circumstance? To what use could the forces of nature and the contrivances of man be put to maintain life and renew social institutions for the survivors? Would a new society evolve like the one that had been destroyed, almost? Cloth bound, 373 pages.

BIOLOGIE DER GOETHEZEIT von Dr. Friederich Kipp (Hippokrates-Verlag. Marquardt & Cie., Stuttgarts, Germany. 1949 $5.50) Biology of Goethe's Time by Dr. Friederich Kipp. (The Chronica Botanica Co., Waltham, Mass.)

A classical treatment of the fundamentals and principal problems of Biology in the time of the great naturalist, Johann Wolfgang v. Goethe.

IRIS FOR EVERY GARDEN by Sydney B. Mitchell. (M. Barrows & Company, Inc., Publishers, 114 East 32nd Street, New York 16, New York. 1949 $3.00)

This book is a real treat for all who love irises. The amateur as well as the specialist will be delighted with the simple, commonsense directions for the successful growing of this popular perennial. The author begins with an Iris world tour; includes the bulbous, bearded, beardless, and crested types; discusses breeding and growing iris from seed; and plans Iris gardens with suggested companion plants. Cloth bound, 224 pages with 9 pages of colored reproductions and a number of line drawings.

SUCCESS WITH WILD FLOWERS by Frank C. Pellett (A. T. DeLaMare Company, Inc., Publishers, 448 West 37th Street, New York 18, New York. 1947. $2.50)

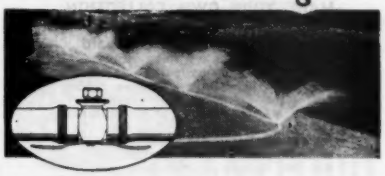
An Iowa naturalist has recorded in this book his forty years experiences with wild flowers. The author tells his readers how to succeed with wild flowers, under what conditions you may expect them to prosper and how to avoid failure. With this book at hand, the whole earth's face can be your plant nursery. Cloth bound, 193 pages. The book is profusely illustrated with colored and black and white plates.

### *Experimental Farm and Gardens*

•

The Experimental Farm and Gardens are open to inspection by visitors from 8 a. m. to 4:30 p. m. daily. During these hours a qualified person will be on hand to show visitors the gardens and to explain the experiments.


**scientific watering!**



AMAZING, NEW

**SPRINKLIT**

**5 sprayers on 1 hose**

*Completely* waters flower beds, shrubs, trees, narrow strips, irregular shaped areas. Covers 1 to 1000 sq. ft. Sprayers turn on and off individually; flow adjusted at faucet from full volume of fine spray down to soaking volume. *Utility hose* with sprayers turned off. 50 ft. Goodrich plastic hose; 5 solid brass sprayers. Weighs only 8 lbs. 5-year guarantee.

*Order Now—in time for hot weather.*
**Goodrich Koroseal Plastic—$17.95**
**Goodrich Ribbed Plastic —$14.95**
(Plus Postage—50c E. of Miss.; $1. W. of Miss.)
**SORRY NO C.O.D.'s**

**HOWARD SALES CO.**
**1650 C Belmont Ave. New Hyde Park, N.Y.**
*Dealer Inquiries Invited*

Orlyt GREENHOUSE
This Model—$395
All Orlyt Prices Reduced Including Lean-tos and Greenhouses With Straight Sides
Simple to put up anywhere, any time. Sections go together with bolts and screws. No cutting, fitting, or putty glazing. $395 buys the 10 by 11 ft. Orlyt pictured ready to go on your foundation. Others from $175. Automatic heat and ventilation at reasonable prices. Ask for Booklet No. 27.
LORD & BURNHAM
IRVINGTON N. Y. • DES PLAINES ILL.

**ROTO-HOE**

**2 H.P. ROTO-HOE** *only* **$134.00**
**Roto-Cutter attachment $40.00**

Acclaimed everywhere shown as America's finest Garden Cultivator for small & medium gardens

**Ask your dealer for demonstration or send postcard for FREE folder**

*Dealer Inquiries Invited*

**ROTO-HOE and SPRAYER CO.**
Box 2
Novelty, Ohio

**IRIS SPECIAL**

MAKE YOUR OWN COLLECTION:
Any 5 for $2.00; any 10 for $3.50
all 16 for $5.00 postpaid

Aztec Copper—Smokey violet copper
Amigo—Velvety pansy purple
City of Lincoln—Huge red-yellow bicolor
Fort Knox—Beautiful banana yellow
Golden Majesty—Intense golden yellow
Indiana Sunset—Huge apricot-rose
Jake—Very large pure white
Mary E. Nichols—Creamy white
Mrs. W. Jasques—Buffled deep pink
Persia—Purple-cream blend
Prince of Orange—Deepest orange
Radiant—Brilliant copper and red
Red Gleam—Fiery red
Sierra Blue—Very large medium blue
Stardom—Luscious coppery pink
Treasure Island—Huge medium yellow

*Free Iris and Perennial catalog on request*

LAMB NURSERIES
E. 101 Sharp Box O-5 Spokane 11, Wash.

**Want a Better LAWN?**

ActivO can help a lot. It energizes, activates, conditions, and stimulates (yet it is not a fertilizer). It peps up poor lawn soils, makes good soils better, makes fertilizer more effective .... Use ActivO direct, or as activator in top dressings, mulch and fertilizer—or use it to make lawn compost. ($2 size activates up to 2400 lb. lawn dressing.) Dealers, or

**Benson-Maclean** BOX 44, BRIDGETON, INDIANA

**MICHIGAN PEAT**

Enriches, vitalizes your soil. Used on government plantings, parks, etc. Unequalled for lawns, azaleas, roses and flowers. At leading dealers or send $1.00 for trial bag postpaid. Michigan Peat, Inc., 267 5 Ave., N.Y.

*Interested in learning to*
*WRITE?*

***Let these three books start you off on the right path . . .***

**The Word Finder**
*by* J. I. RODALE

Speedily builds bare thoughts into expressive sentences. *Much more useful than a thesaurus!* 1350 double column pages, thumb-indexed. **$6.50**

**The Word Bank**
*by* S. BASESCU

A new type of synonym book. Quickly helps you find the *right* word. Invaluable for building your vocabulary. 216 pages. **$3.00**

**Short Story Writing**
*by* F. ORLIN TREMAINE

Step-by-step guidance by popular editor and author. Includes complete short story with analysis. Adopted by U. of Vermont. 240 pages. **$3.50**

Postage prepaid when cash accompanies order.
**RODALE PRESS, Dept. 5-G, Emmaus, Pa.**

# Readers' Correspondence

*Firefang in the Compost Heap*

*Q.* Today I investigated my compost heap to see what was going on (the heap had heated well). I found that much firefang was showing in the heap. I turned the heap and wet it down as I did. Why does the material firefang and what should be done to prevent it?

M. E. MacG., Brewster, Mass.

*A.* Firefang is a result of a burning in the compost heap. The heap should be kept wetter and well aerated at all times. The white color is caused by fungus mycelia. Firefanging involves the burning up of organic materials and the loss of nitrogen.

*Caterpillars in Shade Trees*

*Q.* This year has occurred the worst infestation of caterpillars in this vicinity that I have ever seen. It is very distressing because the shade trees are naturally organically fertilized and receive no poison sprays, and I am puzzled as to why they should be so infested.

Mrs. G. M. M.,
Brattleboro, Vermont

*A.* The leaves of most shade trees are raked up and destroyed on the spot or hauled away to a dump somewhere. This practice leads to the rapid depletion of the soil of the nutrient elements which are essential for the normal health of the trees. Insect infestation is one of the surest indications that the soil is lacking in one or more elements. Even colleges rake the leaves from the campus and destroy them and then wonder why their trees are dying. They seem not to realize that they are


# PREVENTION

**A NEW MONTHLY MAGAZINE will be published under the editorship of J. I. Rodale of ORGANIC GARDENING Magazine, to be devoted solely to the conservation of human health, stressing exclusively the prevention of disease, not its cure. The name of the magazine will be PREVENTION. The only magazine of its kind ever published, it will be conducted on an extremely high plane. No advertising of medical or health products will be accepted, but PREVENTION will make editorial comment on products it feels worthy of mention.**

Mr. Rodale's first interest was in the field of general health, and about eight years ago he was the publisher of "Health Guide". This magazine was discontinued so that he could concentrate on his new publication, Organic Gardening. But now, thousands of his readers have shown such an interest in health matters (and are continually writing to us for health information which we do not believe to be within the province of a gardening publication), that we feel it necessary to start this new publication, the material for which will be written by experts.

**Organic Education in the Cities**

We are starting PREVENTION for another reason. Through Organic Gardening and The Organic Farmer we are reaching farmers and gardeners, but we have no way of reaching the general public that neither farms nor gardens. In seeking circulation for PREVENTION Magazine, we will go into the cities. Thus we will have a means of describing the evils of chemical fertilization to an important new segment of the population, so that they can raise their voices in the accelerating movement against chemical fertilizers, poison sprays, and preservative poisons in foods.

**We want to build the organic movement stronger and stronger.**

**PREVENT DISEASE**

Do you use aluminum utensils in your cooking? Do you use a pressure cooker? Do you want a simple method of stopping tooth decay? PREVENTION Magazine will keep you on safe ground with regard to such questions.

The first issue will be out about May 15th. Consider the cost not as a subscription to a magazine, but as a medical fee to enable you to keep posted on the latest discoveries in the prevention of disease, and to stay healthy. Better to pay this small fee than to pay the doctor!

You need send no money; we will be glad to mail a bill.

**PREVENTION MAGAZINE**
**c/o ORGANIC GARDENING, Dept. 5G**
**EMMAUS, PENNA.**

**Please enter my subscription for**
**1 yr. $3 ☐ 2 yrs. $5 ☐ 3 yrs. $6 ☐**
**4 yrs. $7 ☐ 5 yrs. $8 ☐**

Name .....
Address .....
.....
City ..... State .....

working against nature in keeping the soil in condition for the healthful growth of their trees. The trees absorb the elements which they need to maintain their resistance to insects from soil far below the surface of the ground and deliver them on the surface in the leaves which they shed. It is nature's plan that these leaves decompose on the soil beneath the trees to form humus and make available the essential nutrient elements.

### *Compost Without Manure*

*Q.* I have lots of cuttings from the fernery, weeds, and leaves. Can I convert these materials into a good grade of compost without manure? I want to compost my orange trees which have abnormally yellow leaves.

H. B., Pomona Park, Fla.

*A.* Plant materials such as you mentioned can be converted into compost without manure by cutting or shredding the plant materials and mixing them thoroughly with garbage, compost, soil, and various kinds of pulverized rocks if and as available. This mixture can be inoculated with earthworms which will do the turning and supply the manure. Or an approved activator, as Activo, B.C.A., and others advertised

(*Continued on page* 60)


GARDENERS'
FIRST CHOICE!
3 H. P. 12" Model
ONLY $236
F.O.B. Milwaukee

- Tills, Mulches, Cultivates!
- 9 "Plug-in" Attachments for Spraying, Mowing, Hilling, Seeding, Bulldozing, Snowplowing, other work!
- Also 16"—26" tillers and power take-off models!
- Write Dept. OG-5 for folder and detailed information.

MILWAUKEE EQUIPMENT
M-E ROTARY TILLERS
SOUTH MILWAUKEE WISCONSIN
Patented
© 1950 MILWAUKEE EQUIPMENT MFG. CO

GREATER YIELD
Healthy, Sturdy Plants

Adjustable shredding, fine or coarse — to suit your needs.

. . result when you use the richer, smoother moisture-retaining compost mixed by a
KEMP POWER SOIL SHREDDER
These sturdy machines, with unbreakable spring steel cutting teeth, mix soils, manure and compost 90% faster and more thoroughly with little effort. Pay for themselves in one season! Six models to choose from. Priced from $100.00. Write now for the KEMP Catalog.
*51 Years' Experience Manufacturing Soil Shredding Machines*
KEMP MANUFACTURING CO.
Dept. 4 1027 E. 20th St. Erie, Pa.

COMPOST AS YOU WANT IT

- SCREENED
- SHREDDED
- GROUND
- MIXED
- PILED

Rocks, trash separated. Grinds manure and tough organic matter through rolling screens, wet or dry. Screens fine as wanted through perforated screens. Free compost circular.
W-W GRINDER CORP. Dept. B WICHITA, KANSAS

*Start Your Difficult*
GARDEN SEEDS
with the
SPROUTMASTER
*Write for free literature.*
WESTERN NUTRITION LABORATORIES
8 ORANGE STREET. REDLANDS, CALIFORNIA

THE
1950
HANDY-TRAK
only $135

*Power!*
*Balance!*
*Pivot turns!*
*Traction!*

*A Combination of Quality And Economy*
The only small one wheel tractor that will plow efficiently! The accessories for this versatile, 142 lb. tractor include plow, harrow, cultivator, riding sulky, lawn mower adapter, etc., all of which are attached quickly with a drop pin. For descriptive literature, write:
GARDEN MACHINES CO.
HADDON HEIGHTS, N. J.

HASTEN COMPOST MATURITY
with *Live, Growing*
Biologic Enzyme Process

use YEAST BIORG Nature's Miracle PLANTFOOD
and *Enzyme*

That's right, YEAST. Ever since life came to this Earth this miracle fungus did practically all the world's ACTIVATING. It rotted wood, decayed leaves, soured grapes and 'activated' hops, barley and dough. Concentrated into powerful energy yeast, it is now "HARNESSED" as
One of the World's Highest
NITROGEN ORGANICS
Because of its concentration (50% Protein) it can be diluted 10 or 20 times. This makes it inexpensive enough to compete with cheap but high freight chemical or low organic fertilizers. We "harnessed" yeast for you into 3 most useful Organic Gardener's aids:
BIORG: the LIVE yeast formula for compost activation. Contains both: Soil Bacteria and Active Yeast. Mix into compost heap.
SOILORG: the dry yeast formula. A dilutable Plant Food. Very high in both Soluble and Slow Nitrogen. DILUTE and apply direct to soil.
GROWFAX: the CONCENTRATED worm food fortifier. Use as is or fortify weak worm foods.
All these are available in generous $1. and $2. sizes. POSTPAID. Quotes in bulk by request. If dealer is out order direct.
SCHIFF BIO-FOODS SOILORG
DEPT OG-5a • JERSEY CITY 3, N.J.

WRITE NOW FOR GOVE'S Gladiolus Book

80 Pages—
Beautiful Pictures
For years a specialist in this most satisfactory of summer flowers, I believe my catalog is the best, largest, most up-to-date book published on Glad Culture.
I list 400 leading varieties—including this year's top introductions, old and new favorites and the best from the WORLD'S leading hybridizers. Many SPECIAL COLLECTIONS of wonderful value. You'll like the 12 Groupings—earliest, tallest, most beautiful, etc. Write today for this big GOVE GLAD BOOK sent anywhere for 6c stamps.
CHAMPLAIN VIEW GARDENS
ELMER GOVE Box G Burlington, Vt.

Little Farmer
powered cultivator
$94.50
F.O.B. ORRVILLE, O.
At last, an effective powered cultivator in the low-price field. LITTLE FARMER is ideal for city or farm garden use. Compact design and fine balance make it easy to operate. Just right for narrow rows where larger equipment may damage plants. Write NOW for complete information. Dealer inquiries also invited.
The Will Burt Co. ORRVILLE, OHIO
Department O

## *Save The Pollinating Insects*

(*Continued from page 29*)

entirely dependent upon the honeybee for pollination since it is the only insect which can be moved into areas where the service is needed. It is fortunate, indeed, that there are honeybees, for otherwise crop yields in many cases would fall so low as to destroy the agriculture of some of the intensively cultivated specialties.

A few months ago I was invited to make a survey of this condition for the Department of Agriculture of a western state. While visiting neighborhoods where specialization is highly developed, I noted some very interesting facts. In some neighborhoods this problem has reached a critical stage and yet the farmers do not realize the cause of the trouble. They only know that they no longer harvest profitable crops but do not understand why. In others the situation has been saved by moving in honeybees from long distances. I personally talked with growers who had increased their yields to four or five times what they had been able to get without the bees.

Unfortunately, taking the country as a whole, there are not enough honeybees to meet the need and many growers must continue to suffer for lack of foresight which recognized the value of the native insect population. The best estimates available indicate a shortage of one-third to one-half of the seeds of such legumes as alfalfa and the clovers, which are needed to restore the grassland balance of our agriculture. The taxpayer is called upon to provide funds to pay support prices for grains raised on lands that should be returned to meadow or pasture. Even though the farmer may be disposed to make the change, there is not enough seed available and apparently will not be for some time to come.

Corn is the major crop for both Iowa and Illinois and the presence of the corn borer is causing the general use of poison in an effort to effect its control. This widespread application of poison to control the borer will further reduce the wild bee pollination and, in many neighborhoods, make it impossible to produce profitable crops of fruit or clover seed.

To appreciate the importance of this situation it is only necessary to compare conditions in neighborhoods where every acre is intensively cultivated over a wide area, to one where there is much unused or waste land where the wild bees are still present. In one neighborhood I visited a clover field where several hives of bees had been placed to insure pollination. An examination disclosed fifty to sixty seeds in each clover head. In another clover field a few miles away where no bees had been brought in, I found only one clover head with any seed and there were only two or three in that one. Both fields were in areas where intensive cultivation has destroyed the wild bees.

On farms where there is waste land nearby, many wild bees still remain even though their numbers have been greatly reduced on the cultivated areas. There one finds reduced yields, but not entire failure of pollination.

In some seasons the problem becomes much more acute than in others, depending upon the weather at the time the flowers are open. In calm and sunny weather when bees can fly all day, individual bees will be able to visit very large numbers of flowers. When the weather is cool and showery and the flying time is shortened, many more bees are needed to supply the service in pollination. It sometimes happens that there will be only a few hours of favorable weather during the entire flowering time of orchard fruits. In such seasons, unless there be a large insect population, the fruit crop is sure to be light.

### THE REMEDY

The situation has become so acute in some areas as to bring forcibly to public attention the importance of conservation of our insect population. These facts must be given far wider circulation and provision must be made to save the remnant of our pollinating insects. Those who insist on the use of poison in the control of pests, must be made to respect the rights of others and not destroy the useful population of neighboring lands. Fencerows and roadsides must be given over to plants which serve the needs of honeybees as well as wild bees. Unless honey production continues as a profitable occupation, the commercial beekeeper will be unable to save the situation in neighborhoods where the wild insects have disappeared.

Wild bees which live in pairs or very small families reproduce but slowly, and cannot quickly be restored to their former abundance. Not only must they be protected from poison, but suitable nesting areas must be provided. They cannot thrive in cultivated fields or closely grazed pastures. It is only the pressure of necessity which will bring the public to a sense of the importance of this problem. Already the midwest farmer knows that he can no longer produce the clover seed in its former abundance. Orchards have disappeared from some neighborhoods without the grower understanding why he could no longer grow a profitable crop. As it stands now the beekeeper holds the key to national prosperity. A prosperous nation requires a prosperous agriculture which is only possible by a well planned rotation that includes soil-building legumes. Legumes depend upon bees for pollination in seed production. Without the bees agricultural prosperity cannot be maintained.

The honeybee is not an efficient pollinator of all crops, but by concentrating large numbers in a limited area they can secure pollination. It is greatly to the advantage of the nation to restore, as far as is possible, the balance which nature has established. It is high time to be about it for "It is later than we think."

 (*Continued from page* 38)

entirely a matter of ensuring that the seed will start its growth in a moist environment? With larger seeds, such as beans, squash and corn, we also have in mind the desirability of starting the root well below the surface so that the stem of the young plant may find some support and its root receive some protection, but my observations are that, under right conditions, most seedlings will be able to take care of themselves in that respect. The provision for moisture is the really important factor.

The organic gardener is singularly well able to meet this requirement, and from my own results I know how well he is repaid for the little extra trouble he must take to make use of the advantages that are his. Dry compost will absorb approximately twice its own weight of water; a seed surrounded with compost is thus assured of the moisture which it needs. Much less covering is therefore required than when ordinary soil is used.

What are the advantages of shallow seeding? In early spring, heavy rains are likely to pack sodden soil on to the newly sown seed. Sprouting root and stem have to force their way, downwards or upwards, against the resistance of this heavy soil; poor germination may well result if the layer above the seed is too deep. A further advantage is that the sun's warmth can penetrate more easily through a shallow covering, a matter of some importance in a chilly spring.

I have come to believe more and more in the wisdom of shallow seeding. A few years ago, I was sowing lettuce seed in my coldframe and clumsily dropped the packet; many seeds were spilled. Those spilled seeds germinated a couple of days earlier than those in my carefully prepared drill, they gave a stand of seedlings which were sturdier and more even in size, and kept ahead of the others right through their growth. That started me thinking.

The procedure I follow is this. For spring sowing of small seeds such as lettuce, radishes, early cabbage, kohlrabi, carrots and so forth, I make a drill about an inch deep. I fill this with sifted compost (through ½ inch mesh) and tamp it down with the back of my rake or hoe. The drill is then about half full. I sow my seeds on the tamped surface and again use the back of the hoe (or sometimes my knuckles) to press the seed into the soil to produce close contact between them. Then I sprinkle more of the sifted compost on top of the seeds—just enough to cover them—and lightly tamp down again. This leaves the surface of the drill a little below that of the surrounding soil. When the seeds are well up, I rake soil into the drill until it is filled.

In the summer months, when there is greater danger of surface-drying, I make my seed covering a little deeper. For larger seeds, such as peas, I follow a similar procedure but the drills are 4 inches deep, the lower layer of compost 1 inch and the covering about ½ inch. As the sprouts appear, I gradually fill in the trench. Because beans are sown in warmer and usually drier weather, I cover the seeds with about an inch of compost.

**CALADIUM**

*Spring Special!*

**4**

Named Varieties & Giant Jardiniere

***$1.75***

Get these bargain bulbs. Grow exotic house plants! Enjoy their profusion of color. Fancy leaved Caladium—flourishes now thru Fall. 4 Named varieties: Peed, Candidum, Lord Derby, Haldeman... red, rose, pink, white. Dramatic display. Ready to start. Bulbs come planted in giant sculpture form jardiniere cast in pressed wood fibre. Just add water. Complete only $1.75. Satisfaction guaranteed.

**BULB OF THE MONTH CLUB** 125 W. Madison Dept. OGC Chicago

**Colloidal Phosphate**

**A Soft Phosphate with Colloidal Clay**

A NATURALLY FINE PRODUCT IN READILY AVAILABLE FORM

Containing 14 Trace Elements

*One of the fastest acting mined products in history*

TENNESSEE & FLORIDA ROCK—All Grades

"Organically Recommended"

HOOVER SOIL SERVICE

Phone 70 GILMAN, ILLINOIS

**MULCH** with MUL-Tex to
1- Hold soil moisture
2- Smother weeds
3- Eliminate need for cultivation

Is the sun stealing vital moisture from your garden? MUL-TEX (non-absorptive buckwheat hull mulch) lets rain through and holds it beneath—keeps sun from drying out ground.

Ideal for flower beds, gardens, lawns, shrubs. Dark brown color gives rich background, especially for roses. 200 lbs. will cover 260 sq. ft. one inch deep. Convenient 50 lb. bags.

**PRICES: 200 lbs. $5.00—500 lbs. $10.50 —1000 lbs. $19.00—2000 lbs. $35.00 all f.o.b. Cohocton. Order from this ad, or send for free descriptive folder.**

LARROWE MILLS, INC.

BOX 1 COHOCTON, N. Y.

**SUPER-COMPOST Has Gone Over Big!**

**21 months without a complaint. It is something really good to dig into your soil. No waiting for results—it acts at once. Too, it is complete. Nothing else needed. It feeds your plants, and renews your soil. It is a proven product.**

*Write for literature.*

KNAPP & KNAPP

988 Lewelling Boulevard
San Lorenzo, California

***Select your Gardening needs from the advertising pages of ORGANIC GARDENING***

## *Readers' Correspondence*

(*Continued from page 57*)

in this magazine may be used to break down the materials in a relatively short time.

*Compost for the Garden Without Heaps*

*Q.* It does not suit to make compost for my garden. However, I can get barnyard manure to use. I am wondering if it would be advisable to use bone meal and cottonseed meal also. I also have poultry manure.

D. J. B., Harman, W. Va.

*A.* Compost for the garden can be made without compost heaps or compost pits. Cut or shred the plant materials as finely as possible and spread them out over the soil of your garden. Then spread over this material bone meal, cottonseed meal,

(*Continued on next page*)


## Friends of ORGANIC GARDENING Can Help Build Circulation by Handing Out Free Subscription Booklets

*Organic Gardening* is constantly striving to increase its subscription list. It is important that we tell as many people as possible about organic gardening. Perhaps you would like to take an active part in this important program by handing out our subscription booklets to friends, neighbors, and acquaintances in your community. If you would like some extra money, this spare-time activity will return liberal commissions. The booklet will induce your prospect to subscribe. Through a coded coupon we can trace each subscription to your efforts.

**SEND FOR FREE BOOKLETS** Write to Organic Gardening, Dept. Q., Emmaus, Pa. We will be glad to send you 25 or 50 booklets. State how many you want.

*Organic Gardening inaugurates its own*

*BOOK OF THE MONTH*

**See outside back cover of this issue for details on how**

***YOU CAN SAVE 20% ON CLOTHBOUND BOOKS!***

***You'll like***

THE ORGANIC FARMER

**Its wide coverage on all phases of farming makes it an ideal magazine for the owner, or potential owner, of any size farm.**

***Join our thousands of enthusiastic subscribers, people who claim:***

"I know of no other periodical, no other subject, so utterly stimulating and fascinating."

BETH ST. CLAIR, Galt, Ontario.

"I have received my first issues of *The Organic Farmer* and I am very glad that I subscribed. I believe it is one of the best farm magazines."

J. C. ANSELL, Jennerstown, Pa.

***One Year, $3*** ***Two Years, $5*** ***Three Years, $6***

***Write today!*** **THE ORGANIC FARMER, Dept. 5-G, Emmaus, Pa.**


## *Clay at Rab's Corner*

(*Continued from page 45*)

and two feet wide. Into it we put lawn-mowings, kitchen-scrapings, dead animals and birds—any organic matter to hand. When half-full, we cut a second trench four feet beyond the first, using the leaves to fill up the latter and putting the remainder of them on top of the heap between it and the end of the heap. When the second trench is full we make a third, and so on to the far end of the heap, which can be of any length really. We then begin anew, but in the opposite direction. My experience is that, when the mobile trench is back where it began, the heap is ripe for use. Yet we let it lie with marrows growing on top to give shade, until the moment comes for using it, which may be the following September.

No. 4. *Rab's Corner Hen Compost.* This is a method of our own. Next to the hen-run, a square excavation is made, say 20 feet by 20, not more than one foot deep and surrounded by wire netting. Into it we put bales of straw. The fowls work on these, scattering the straw all over the square. We then heap it up again in the middle, whereupon the fowls immediately start throwing the heap down again, scratching and picking. Once a week the heap is built up again for the fowls to attack, they do not like things on the flat. The long straw begins to break up, and the droppings of the fowls get mixed with it; at intervals we add droppings from the hen-houses. By stages difficult to follow, but clearly noticeable, the heap changes colour. The yellow-reddish-gold of the straw changes first to grey, then to grey-black and finally to blackish-grey. Then the constituents of the heap can no longer be discerned; A1 compost is ready for use. I believe this compost is the best we have; indeed, judging by results, a pound of it is as potent as a cwt. of compost made by any other method. Still, years of experiment will be needed before we can be certain. In matters connected with the soil, ten years are but a moment; a hundred are the safest standard measure.

**What's All This Furore About**

**ENZYMES?**

Forgive us a chuckle. To read some editorial columns and ads, you'd think there was something new and magic about producing **enzymes!**

**ActivO** users have been getting top enzyme production in compost and soil for years—and without a lot of fol-de-rol and expense with sprouted cereals and what not! (Many have wondered at the secret that made ActivO so good!) **Only the combination of CORRECT bacterial action and hormone-vitamin-biotic action, with mineral modulation,** produces the MOST ENZYMES.

And you get all this automatically when you use **ActivO.** By all means, turn now and read the offering on page 5.

**BENSON-MACLEAN** ACTIVO DEPT., BRIDGETON, 44, IND.

**MARTIN'S GRANITE DUST**

***A Natural Ground Rock.***

This native potash rock supplies 16 trace elements plus a sufficient amount of potash for abundant plant growth. You'll be amazed at the results when you remineralize your soil with Martin's granite dust. The slow release of nutrients makes a single application last for years—yet it insures a sufficient supply of natural minerals for your crops. Apply at the rate of ½ ton or more per acre. Prices: $19 per ton in bags, F.O.B. quarry. $2.00 per 100-lb. bag in less than ton lots. Write for additional information.

**BALLY SPECIALTY PRODUCTS, Bally 2, Pa.**

**ORGANIC SUPPLEMENTS**

**TO increase the NPK of your garden organically, we offer the following supplements—**

***For Nitrogen (N)***

**DECOMPOSED ORGANICS**—an excellent plant food containing nitrogen fixing organisms.

***For Phosphorus (P)***

**BONE MEAL & RAW PHOSPHATE ROCK**—finely pulverized natural rock phosphate.

***For Potassium (K)***

**ORGANIC POTASH**—a natural organic derived from an organic ash. No acid or acid reactive substances.

These products may be ordered separately, or blended into a well balanced plant food. Each item contains many of the trace elements so essential to your soil.

***Write today for full information!***

**ORGANIC PLANT FOOD CO.**

P. O. Box 132 Lancaster, Pa.

100 Lb. Bags (Freight Collect)

| | |
|---|---|
| **Pulverized Sheep Manure** | **$2.95** |
| **Dried Blood and Bone Meal** | **5.25** |
| **Cottonseed Meal** | **3.95** |
| **German Peat Moss (120 lb. Bale)** | **4.95** |

**GULF-PRAIRIE CO.**

Box 4082 Corpus Christi, Texas

**If you are interested in J. I. Rodale's articles on cancer,** read **"The Healthy Hunzas".** This informative book describes a race of cancer-free people in the northwestern section of India. Your eyes will be opened when you learn the important part farming plays in the health and prosperity of the world. Written by J. I. Rodale, this clothbound book sells for **$3.00** postpaid. ***Send for your copy today.***

**ORGANIC GARDENING**

Dept. 5-G, Emmaus, Pa.


and manure and work them into the soil lightly. If finely ground, the material will decompose rapidly and give you a high grade compost. If manure is not available, mix a suitable compost starter in water and sprinkle it over the material to be composted. By composting the materials where your vegetables and flowers are to be grown, all plant juices will leach into the soil and there become available for your plants.

*Q.* What type of pods were used in the dry-weed arrangement in the January issue of ORGANIC GARDENING?

Mrs. G. F., Bellingham, Wash.

*Answer:*

Organic Gardening Magazine,
Emmaus, Pa.

The picture of my arrangement in your magazine gave me great satisfaction.

As for the material in my arrangement—the pods are milkweed, cut when green and milky. The seeds were carefully removed in order to keep the supporting tissue intact, and the pods *boiled* in rinse-type dye (Tintex) —The sappy condition of the pods caused the contrast of tones so well brought out in your excellent photograph, and the carefully preserved tissue gives the appearance of the spadix within a spathe.

The radiating forms poised above the pods are dried seed heads of Queen Anne's Lace, dipped quickly in and out of the same dye, and the grasses floating above the pods are fox-tail grasses, cut dry, which were treated the same way.

The material is placed on a plaque made by sawing an oblique slice from a small oak log. This was seasoned, rubbed well with pumice and oil, then waxed.

Ruth Conover,
672 Ridgewood Rd., Oradell, N. J.

**"Get Acquainted" BARGAIN**

**50** RARE BULBS *only* **$3.85**

**START YOUR SPRING GARDEN NOW!**

Get this rare collection of spring flowers. Plant outdoors as soon as the ground is soft. **10 top-grade bulbs of:** ACIDANTHERA..Tall, Hardy blossoms—creamy petals with maroon markings; ANEMONE..French doubles. Brilliant colors make marvelous bouquets; OXALIS.. their pink-copper colors serve as decorative annual; RANUNCULUS..long lasting, easily grown. Make a pleasing effect; TENUFOLIUM..Distinctive apricot colored Lily.

Only the best bulbs are selected..to bring you years of beauty and enjoyment.

This offer won't last long. Please mail request **Today!**

**BULB** OF THE MONTH **CLUB** 125 W. Madison Dept. OG6 Chicago

FOR THE **JOY** OF ORGANIC GARDENING

**ActivO** makes rich, activated compost-fertilizer quicker, better, easier, cheaper from **waste**.. leaves, garbage, etc.... **(reduces garbage without odor!)**...Activates, conditions and sweetens soils...Many other uses. **Organic.** Bacterial. Odorless. Trial size for 425-lb. compost. No. 71-1025, $1.. 1400 lb. size, No. 71-1030, $2.

**SEARS, ROEBUCK & COMPANY Catalogs**

FRUIT & NUT TREES T-V-M QUALITY STOCK

**Fruit, Nut trees and Gladiolus Bulbs, Berry plants, Roses, Fig and Shade Trees, Shrubs, etc. Send for 48 page free catalog. 700 varieties.**

**Tualatin Valley Nurseries** SHEPWOOD, OREGON

**IRIS Reduced Prices**

***Day Lilies — Poppies***

**Write for free catalog or visit**

**WITTMAN'S IRIS GARDENS**

**1447 Van Houten Ave. (Off Route 6) Clifton, N. J.**

CHINESE, ENGLISH & AMERICAN

**HOLLY**

22 ENGLISH VARIETIES
HARDY NAMED STOCK

***Send for FREE CATALOG***

**The WILMAT HOLLY CO.**

Box 304-A, NARBERTH, PA.

**VITAMINS** PRODUCED IN YOUR KITCHEN

WITH THE IN 3 DAYS **SPROUTMASTER**

***Write for free literature—Dealers Wanted***

**Western Nutrition Laboratories**

6 ORANGE STREET, REDLANDS, CALIF.

*More Important Than Ever:*

# *Binders*

***for your valuable copies of Organic Gardening***

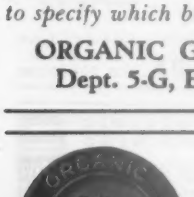
All the news, features, editorials, to which you look forward every month can be preserved in these handy, durable, attractive leatherette binders—instantly ready for you to consult. A file of *Organic Gardening* is a permanent encyclopedia of organiculture, health, and inspiration.

**New-size binders: $1.50.**

**Binders for Organic Gardening Library Booklets: $1.25.**

Each binder holds 12 copies—easily inserted and removed. Stamped in gold on front and backbone. *Be sure to specify which binder you want!*

**ORGANIC GARDENING**
**Dept. 5-G, Emmaus, Pa.**




**ORGANIC GARDENING BUTTONS may now be obtained through the ORGANIC GARDENING office. These attractive bronze buttons with green enamel border are excellent for garden clubs or individual use. Price 50c.**

**OFFICIAL ORGANICULTURE EMBLEM**

**Organic Gardening, Emmaus, Pa.**

***J. I. Rodale's***

***Editorials on Cancer***

**are available in the back issues of Organic Gardening. Be sure not to miss these eye-opening articles on food, chemicals, and cancer. All issues available from June '49. 25c per copy. May and June '49 cancer editorials in a single pamphlet, 25c.**

ORGANIC GARDENING, Emmaus, Pa.

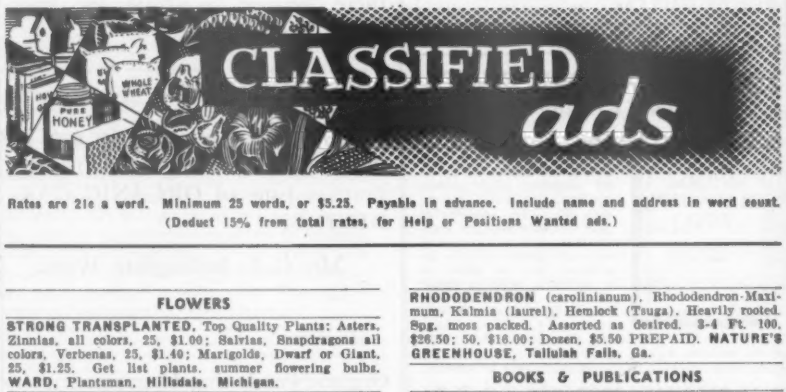
**Build Your Organic Gardening library with back copies. All 1948-'50 issues available except May and Dec. '48; Jan., April, and May '49. 25c ea.**

ORGANIC GARDENING, Emmaus, Pa.

## ORGANIC FOOD DIRECTORY

ORGANIC GARDENING *invites all who have organically grown foods for sale to list them in the* Organic Gardening Directory. *There will be no charge for listing your name, address, and organically grown produce in this directory. Write us, telling in detail what you have that is organically grown, mentioning how long and in what manner you have applied the method. Write to*

**Organic Food Division**
**ORGANIC GARDENING, Emmaus, Pa.**




# CLASSIFIED *ads*

**Rates are 21c a word. Minimum 25 words, or $5.25. Payable in advance. Include name and address in word count. (Deduct 15% from total rates, for Help or Positions Wanted ads.)**

### FLOWERS

**STRONG TRANSPLANTED,** Top Quality Plants: Asters, Zinnias, all colors, 25, $1.00; Salvias, Snapdragons all colors, Verbenas, 25, $1.40; Marigolds, Dwarf or Giant, 25, $1.25. Get list plants, summer flowering bulbs. **WARD,** Plantsman, **Hillsdale, Michigan.**

**TUBEROUS BEGONIAS** in all their glorious colors. We offer the best tubers and plants. Send for free folder. **BLACKWOOD BEGONIA GARDENS, 1817-0 E. 4th, Superior, Wis.**

**BEGONIAS** Free list now ready including Tuberous, Fibrous, Rex, and all new crosses. Send for it today. **D-VISTA GARDENS, 3225 D St., Salem, Ore.**

**DAHLIAS**—Green Plants and Cuttings. New, Old and Australian Varieties. Send for list. **HANNA DAHLIA GARDENS, Dept. H, 812 S. Deisea Drive, Clayton, New Jersey.**

**DELPHINIUM.** Pac. Giant. Prizewinner, also imported seed of finest Primroses, Columbines, Swiss Giant Pansies. Free Folder. **OFFERMAN DELPHINIUM GARDENS, 4709 W. Stevens, Seattle 6, Wash.**

**5000 Mixed Colors GLADIOLUS BULBLETS $1.00, 40,000 $6.00, 150,000 $20.00 all prepaid. BREWER SONS NURSERY, 138 Vine, Harrisburg, Pa.**

**GLADIOLUS—GARDEN HOBBY PROFITS:** Course of lessons. Instructions for north and south, advocates Organiculture. Worth many dollars, Free to Hobby Gardeners. **HORNBERGER'S, Hamburg, N. Y.**

**GLAMOURIZE YOUR GARDEN WITH HY-LAND GLADS. EXOTIC MIXTURE.** Medium $3.49; small $1.98; 1000—$12.00 all prepaid. Organically grown. **HY-LAND FARMS, Hammonton, N. J.**

**GLOXINIA SEEDS.** Fresh crop Buell's exquisite new hybrid strains. Giant flowered, long blooming. Over 50 different, beautiful color combinations never before available. Per packet (approximately 200 seeds), $1.00 prepaid. **Shipped promptly.** Detailed cultural directions included. Ask for special Gloxinia folder No. G—500, listing plants, tubers, potting soil, etc. **THE BARNES, Importers, East Aurora 24, New York.**

**IRIS**—Closeout Sale on over 2,200 items including Peonies, Poppies and Perennials. Chance of a lifetime to save up to 75%. Big 60 page catalog **FREE. IRIS FARM, Box 02, Beloit, Kansas.**

**IRIS**—Tall bearded, fall blooming, dwarf, intermediate, spuria, beardless, Siberian, Japanese, and rare species. Hemerocallis. Peonies. Oriental Poppies. Perennials. Catalog free. **IMPERIAL IRIS GARDENS, Cornell, Illinois.**

**BARNHAVEN'S FAMOUS HARDY PRIMROSES,** easily grown. Elizabethan forms, beautiful modern Polyanthus, miniatures. Himalayans and fragrant "Dusty Millers" from the Alps. Illustrated catalog upon request. **BARNHAVEN, Gresham, Ore.**

### NURSERY STOCK

**BABY EVERGREENS — SEEDLINGS — TRANSPLANTS — SEEDS.** Azalea - Rhododendron Hybrids. All Northern-grown. Bulbs. Free Catalog. **GIRARD BROS. NURSERY, Geneva, Ohio.**

**NURSERY STOCK.** Robinson, Temple, Premier Strawberry Plants, 100-$1.95; 300-$4.95; 1000-$9.95. Cumberland Raspberry and Eldorado Blackberry Sprouts, 2 yr. old $.10 each 100-$8.50. Giant size blooming Flower plants. Pansies, English Daisies, Myosotis. 12-$1.00; 50-$3.00. **A. WILEY McDONALD, Jr., New Freedom, Pa.**

**RHODODENDRON** (carolinianum), Rhododendron-Maximum, Kalmia (laurel), Hemlock (Tsuga). Heavily rooted. Spg. moss packed. Assorted as desired. 3-4 Ft. 100, $26.50; 50, $16.00; Dozen, $5.50 PREPAID. **NATURE'S GREENHOUSE, Tallulah Falls, Ga.**

### BOOKS & PUBLICATIONS

**"ORGANIC HUSBANDRY"**—Summarizes best Organic literature. $1.00 (clothbound, $2.00); "Wheel-o'-Life" Vitamin Charts. $1.00; Health Leaflets 5c, List mailed. **BRENN, 250 Ayer, Williamsville, N. Y.**

**NEW DIFFERENT HEALTH JOURNAL.** Benefits organic gardeners. Samples 25c. **HEALTH REFORMER, Box 72, Redlands, California.**

**GARDEN BOOKS,** American, British, new and old. Ask to have your name placed on our mailing list. **HORTICULTURAL BOOK SERVICE, 212 Detroit Avenue, Concord, California.**

**"MAKE YOUR OWN WINE"** by Alex Appleyard; from flowers, vegetables, hard and soft fruits and many others. Over a hundred recipes. $1.50 postpaid. **CLINTON KEAGY, New Castle, Penna.**

**"MIRACLES OF MENTAL ACTION."** Tremendously vital, valuable information. Thousands sold. Price $1.00. SATISFACTION GUARANTEED. **SCIENTIFIC INFORMATION SERVICE, 2250 Houghton Ave., SE, New York City 61.**

**"HONEY AND YOUR HEALTH"** by Bodog F. Beck, M.D. and Doree Smedley. A book for those who seek the natural foods for health. $3.00 a copy Postpaid. **CLINTON KEAGY, New Castle, Penna.**

### GARDEN EQUIPMENT

**DELIGHT. PLEASURE.** Fulfillment of gardening dreams. You win at every turn with our incomparable weeding tools—three of them that make you king on your plot of ground. **FREE:** Circular on tools and 8 page discussion of weeds and weeding. Write **KRAMER COMPANY, Dept. 15 Enumclaw, Washington.**

### EARTHWORMS

**RED WIGGLERS** hand picked—1000 $5.00, 3000 $14.00, 5000 and over $4.50 per 1000. Canada add 50c per 1000. Prompt prepaid shipments payable in advance. **LAMBERT WORM RANCH, 2731 Poplar St., Memphis, Tenn.**

**"DAVID'S FOLLY" EARTHWORMS** will build topsoil for your gardens, lawns, and trees. Order for planting now. **"DAVID'S FOLLY" EARTHWORM FARM, West Brooksville, Maine.** Free Folder.

**DR. OLIVER'S Hybrid EARTHWORMS** $2.50 per 500 Prepaid. Our aim—Satisfied Customers. Instructions Free. **KEYSTONE EARTHWORM HATCHERY, 15 N. 30th, Harrisburg, Pa.**

**SELL EARTHWORMS** for soil fertility and for profit. We ship under your name if desired. Particulars free. **EARTHWORMS FARMS CO., 6220 Ridgeview Avenue, Baltimore 6, Maryland.**

**GARDEN SUCCESSFULLY WITH EARTHWORMS.** WRITE now for FREE instructions and EXCITING OFFER. **CAPITAL EARTHWORM FARM, Dept. O, 2514 Fourth Street South, Arlington, Virginia** (CH 4121)

**TRY REJUVENATED EARTH.** Earthworm Castings. Soil Fertilized Nature's Way 35c per No. 2 Can. $1.00 for 3 No. 2 Cans. Approx. 1½ lbs. per Can. Hybrid Earthworms 200 for $1.00. Approx. ¼ lb. per Container. Prices Prepaid Add Postage. **JAM and PAM ORGANIC FARMETTE, 1705 Central Ave., Augusta, Ga.**

**"EARTHWORM NEWS", "PROPAGATION & USE",** many valuable circulars, secrets of 15 years' experience, **FREE.** Write for all-time LOW prices now effective. Start successfully, easily. **CALDWELL, Barwick, Georgia.**

**DOMESTICATED EARTHWORMS:** Select breeders 500 for $4.00—1,000 for $7.00. Culture $7.00 per gallon. Castings $2.75 per gallon. Cash orders prepaid. Free instructions with orders. Live delivery. **EBWOOD EARTHWORM HATCHERY, Box 63, Amherst, Wisconsin.**

**FOR THE BEST in Earthworms** buy LeClear's Husky, Hardy, Northern Grown breeding stock, only full grown, selected stock shipped. Special Flower Fertilizer from the top of worm boxes, 75% worm casts, 25% fine Compost, two quarts postpaid $2.00, six quarts $5.00 postpaid, packed damp. **LeCLEAR'S EARTHWORM HATCHERY, 634 Cottage Grove Street South East, Grand Rapids 7, Michigan.**

**DUNG or RED ORCHARD WORMS** for better growth of plants, shrubs or trees. Use vigorous worms to build best compost. Instructions with shipment. C.O.D. in U.S.A. 1000—$4.50, 5000 or over $4.00—1000. **R. C. ALLEN, 1129 Cooper St., Jackson, Michigan.**

**BETTER COMPOST,** better soil, better growing conditions are obtained by using our scientifically bred soilution earthworms. Write for free folder. **GREENFIELD WORM HATCHERY, 15703 Biltmore, Detroit, 27, Michigan.**

**EARTHWORMS**—Use that famous earthworm developed by the late Dr. Oliver. Free instructions on how to use and raise them. **MIAMI VALLEY EARTHWORM FARM, 109 E. Beechwood Ave., Dayton 5, Ohio.**

**HARDY EARTHWORMS** raised in outdoor pits. Hand Picked, counted and packed with food for two weeks. Live delivery guaranteed. Write for prices. **FLOYD WICKELL, Mt. Sterling, Ohio.**

**EARTHWORMS**—Hardy outside pit raised earthworms. Guaranteed alive on delivery. Price and information sent on request. **DR. BATES and TRAPP WORM FARM, 2424 Sullivant Ave., Columbus 4, Ohio.**

**MODEL BOX SETUP,** including 600 **Soilution** earthworms with capsules and culture, $7.00. Fine for beginners. Large starter, $1.25. Complete instructions. **NATURE'S SOIL BUILDERS, 1544 Spring Garden, Lakewood, Ohio.**

**EARTHWORMS**—nature's own soilbuilders. Get your start, then breed your own. They work without pay. Write for prices and instructions. **ARCHIBALD'S Abingdon, Illinois.**

**GARDENERS:** Impregnate your compost heap with 500 Domesticated Earthworm eggs (hatch 2,000 worms)—$3.00 postpaid with book, complete instructions. **MIDWEST EARTHWORM FARMS, Box 999-K, Wichita 1, Kansas.**

**DON'T BUY WORMS.** Raise your own Red Wigglers, Garden Worms, Night Crawlers by our simple method. AVOID COSTLY MISTAKES. Profit by our years of experience. We can supply worms, vitamin enriched worm feed, composted bed filler, egg capsules at sensible prices, supply bait dealers, fishing camps, pleasant profitable business or hobby book of instructions, illustrated only $1.00 post paid. Descriptive literature free. **HUGHES WORM RANCH, Savannah, Tenn.**

**English MANURE WORMS,** Satisfied customers say they're best of all. Convert green manure, garbage, directly into Humus without composting. Free pamphlet tells why. 500-$3.00, $5.00 thousand postpaid. **PHILLIPS WORM FARM, Box 22, Bessemer, Ala.**

**SOILUTION EARTHWORMS** enrich soil Nature's way. Breeders 500-$3.00, 1000-$5.00. Capsules 400-$5.00, 1000-$10.00 postpaid. **BRUCE ORGANIC GARDENS, 1917 33rd Ave., North, Birmingham, Ala.**

**OZARK WIGGLER EARTHWORMS.** They will survive transplanting in any soil. Write for descriptive literature and prices. **LAKE-HAVEN EARTHWORM HATCHERY, East 7th Street Road, Box 130-B, Joplin, Missouri.**

**DOMESTICATED EARTHWORMS** to build your waste materials into organic rich soil. Call or write **Mrs. L. JONES, 1518 E. 76th, Seattle 5, Wash.**

**"HARNESSING THE EARTHWORM."** Life story of the author, "An Earthworm Turned His Life," mailed free. Write **DR. THOS. J. BARRETT, Dept. 24, Sun Valley, Calif.**

**GROWFAX** worm food CONCENTRATE makes them **GROW FASTER.** Contains the famous "animal protein factor" of fish meal. Use diluted or to fortify less concentrated mesh. $1. **SCHIFF BIO, Jersey City, 3, N. J.** Ask for list.

## FERTILIZERS—SOIL CONDITIONERS

**HEALTH CONDUCING Colloidal Minerals** for soil or compost culture. Over twenty elements. None toxic. Nutrition from the ground up. **"BRABON" RESEARCH for HEALTH, Telford, Pa.**

**FIBEROUS PEAT.** For compost, mulch, improving sandy or clay garden soils. Two bushel bags $1. F.O.B. Holland, Ohio. Write for prices on truck or car loads. Toledo area: you can buy direct. Location, Bancroft near McCord. **GEORGE D. BROWN, Box 573, Route 11, Toledo 7, Ohio.**

**POULTRY MANURE:** 100 lbs. in 50-lb. bags $2.00; 500 lbs. in 50-lb. bags $9.00; 1000 lbs. in 50-lb. bags $16.00; 2000 lbs. in 50-lb. bags $25.00. **DIAMOND STATE EVERGREEN CO., Milton, Del.**

**HOW TO MAKE YOUR OWN SOILMIXTURE AND RE-POT HOUSEPLANTS.** New booklet describes soilmixture for over 50 of the most common houseplants. A helpful, easy guide for anyone interested in having healthy and beautiful house plants. One dollar. Money back guarantee if not satisfied within 5 days. **EBMYD, Thiensville, Wisconsin.**

**IF YOU WISH** to replenish the fertility of your soil with ground phosphate rock, write for information. **MIDWEST PHOSPHATE COMPANY, 405-6 D'Arcy Building, Joliet, Illinois.**

**Mineralized ORGANIC SOIL BUILDER — "CALSOIL"** Contains 20 minerals—blood meal—beef scraps—vegetable matter—bone meal—calcium—(no filler). 10 lbs. $1.20 25 lbs. $2.50 Delivered price. Farm quantities for less. **NORTHERN FIELD SEED CO., Winona, Minn.**

**USE AGRICULTURE LIME** and ground up corn cobs in your composting, each one ($1.00) per 100 lbs. F.O.B. **DONALD OKESON, R. R. 5, Fergus Falls, Minnesota.**

**BIORG ACTIVATOR** really heats up your compost pile fast. Generous supply $1. **SCHIFF BIO FOODS, Jersey City, 3, N. J.**

## FOODS

**"WHOLE FOOD" Shop, Buffalo Area.** Compost-grown, non-preserved foods; "Osterizer" (food blender) $39.50; seed sower $1.00; glassware; etc. List mailed. **250 Ayer, Williamsville, N. Y.**

**Indian River Valencia ORANGES:** $5.65—bushel prepaid, average distances. Honey (not shipped separately): 5 lbs., $1.25. Last weeks of shipping-season. **SCHUYLER JACKSON, Wabasso, Florida.**

**HONEY: Delicious Florida orange blossom,** 2½ lbs. postage paid $1.00. 10 lbs. postage paid $3.75. **NELSON L. WHEELER, St. Cloud, Florida.**

**PURE MAPLE SYRUP.** Fancy grade $6.50 gallon. Grade A $8.00 gallon. Prepaid third zone. Sealed in lithographed cans. Conforms to new Grading Law. Pure, clean, the best. **HARRY D. OWEN, R.F.D. No. 2, Barton, Vermont.**

**WATER CRESS** Wonder Organic Health Food. Rich in calcium, iron, vitamins. Recommended for weak bones, teeth, blood, eyes. 36 bunches $4.68. **CRESSON FARMS, Malvern, Penna.**

**WE MILL Stone ground** Whole Wheat, Cornmeal, Millet, Soy flour unbleached White. Sell hand flour mills, Shredding Devices, Juicers. **GROSE, Box 699, Ledi, Calif.**

**FREE LIST of Health Foods..**Specials, such as **SUNFLOWER SEED,** fine granules, 20 oz. $1.00; **GARLIC-PARSLEY** ('Anti-gas') tablets 60c. and $1.00; **250 ALFALFA** ('Alkaline influence') tablets $1.00; **15 oz.** Whey powder for the colon flora $1.00.; **FORTIFIED SEA KELP: 100-$1.00; AMINO-VITAMIN MIX $2.50;** and other specials. **"SCHIFF BIO BRANDS," Jersey City 3, N. J.**

**NEW-CROP MAPLE SYRUP.** Quart $2. Half-gallon $3.50. Gallon $6. f.o.b. **FOREST FARMS, Jamaica, Vermont.** Little two-ounce sugar-book sent free with "The Maple Sugar Book", 288 pages, $3.75 postpaid.

**SESAME MEAL, Sesame Butter, Sesame Cocoanut Butter,** Sunflower Meal, Sunflower Butter. Each 16 oz. $1.60, 32 ozs. $3.00 postpaid. 16 ozs. of all five $7.50 postpaid. **Milo Maize** 2 lbs. $1.00, 10 lbs. $4.50 postpaid. **Sesame-Millet Cereal, Sunflower-Millet Cereal.** Each 16 ozs. $1.00, 5 lbs. $4.50 postpaid. FREE CATALOGUE. **NATURAL ORGANIC FOODS, Box 222, Big Pines, Calif.**

## VEGETABLE PLANTS

**ONION PLANTS**—Choice Select Yellow or White Sweet Spanish, Yellow or White Bermudas. Satisfaction guaranteed or money refunded. Shipping daily until June. 300, $1.15; 500, $1.50; 1000, $2.50; 3000, $4.25; 6000, $8.00, prepaid. **AUSTIN PLANT COMPANY, Box 313, Austin, Texas.**

**QUALITY FIELDGROWN PLANTS.** Tomato, Margrape, Rutgers. Pepper and Sweet Potato. $2.00—500, $3.50—1000. Tomato 5000—$12.50. Cabbage, onion $1.25—500, $1.75—1000. **SUNSHINE PLANT CO., Rochelle, Ga.**

**SEND NO MONEY — PAY ON ARRIVAL** — Certified plants. Frostproof Cabbage, Onions, Tomatoes, Pepper, Broccoli, Brussel Sprouts, Eggplants, Cauliflower, 200, $1.00; 500, $1.50; 700, $2.00; 1,000, $2.50; 5,000, $10.00. Transplanted plants, 100, $1.50; 500, $5.00; 1,000, $9.00. Sweet Potatoes, $2.00 per thousand. Leading varieties, mixed anyway wanted, mosspacked. **TEXAS PLANT FARMS, Dept. N, Jacksonville, Texas.**

**SWEET POTATO PLANTS.** Improved portoricas and Nancy Halls. 200—$1.00, 500—$1.50, 1000—$2.50. Prompt shipment. Satisfaction Guaranteed. **THRIFT PLANT FARM, Gleason, Tenn.**

## PLANTS

**NATURE'S MIRACLE FERNS** (Everlasting) Opens green in water. Closes when dry. Ideal table decorations. Order NOW. Minimum order five plants $1.00 postpaid. Check or cash with order. Quantity discounts. **BUNKER FERN CO., 204 Mt. Vernon St., Dedham, Mass.**

## GRASS SEED

**Plant MIDGET GRASS.** Never needs cutting. Nothing finer for lawns, slopes, banks, cemetery graves, stone walks. Free circular. **MIDGET GRASS CO., 3370 No. 53rd St., Milwaukee, 16, Wisconsin.**

## BEEHIVES

**BEEHIVE** Factory selling direct saves you 25% on best grade equipment. Carloads in stock. Free Catalog. **WALTER KELLEY CO., Dept. OZ, Paducah, Kentucky.**

## POULTRY

**GOSLINGS,** ducklings, eggs, breeders. Safe shipment anywhere. Bulletins, magazine on raising geese, ducks. **PEYTON FARM, Route 2DO, Duluth, Minnesota.**

## STATIONERY

**UNIQUE INFORMAL STATIONERY.** Twenty original drawings by 20 artists of Lehigh Valley. Fitting for all purposes. Size 3" x 4". Postpaid $1.25. **MRS. WILLIAM H. STEUGERWALD, 213 S. 17th St., Allentown, Pa.**

*NOW—anyone can*

## RAISE WORMS

**Send for your "WORMS UNLIMITED" pamphlet that tells why and how earthworms can be raised for pleasure and profit. No charge — no obligation — just send your name to**

POLSON ENTERPRISES

**1108 Leland Ave. Chicago 40, Ill.**

## Hybrid Earthworms

EARTHWORM CULTURE (eggs, worms and castings) builds and conditions soil, no other fertilizer needed, no hand-turning of compost. They multiply rapidly. DO NOT MIGRATE. Better health for plants and man. Send $1.50 for 100, $15.00 for 1800. Additional savings on larger amounts. FREE information on request. Full instructions with each order.

**SUNSET ACRES, GOLD HILL, OREGON**

*garden successfully*
with EARTHWORMS

**WRITE NOW FOR FREE INSTRUCTIONS AND EXCITING OFFER.....**

**CAPITAL EARTHWORM FARM**
**Dept. O**
**2514 4th St., So. Arlington, Va.**

## HYBRID EARTHWORMS

**Our Domesticated Earthworms are already acclimated and conditioned to different types of weather and soil conditions and on the Pacific Coast can be put to work in Compost at any time. They are sold in gallon containers as Culture (eggs, worms and castings) and in units of 100 or more. Now is the time to place your order.**

**Neptune Beach Earthworm Hatchery**
**Route 3, Box 264, Ferndale, Washington**

**Get the Best for Less**
**at prices everyone can afford!**

*Soilution Earthworms*

***Write for our new reduced price list.***

**COLORADO EARTHWORM HATCHERY**
**2134 DECATUR ST. DENVER 11, COLORADO**

# EARTHWORMS

*Soil's Greatest Asset*

WRITE FOR LITERATURE and PRICES

**ROMAC EARTHWORM FARM**
**BOX 375 ASHLAND, OHIO**

***It's a sensation!***

## The Organic Method on the Farm

**by J. I. RODALE**

**HERE is a 128-page booklet that for the first time provides farmers with a program for instituting the organic method.**

**Included is a description of the odorless, laborless type of chicken house in which odors are controlled by bacteria, and from which the droppings need be cleaned out only once in six months.**

**Various methods of compost-making on a farm scale are discussed. Information is given for both field crops and orcharding.**

**Third edition, revised. Generously illustrated. Price $1.00.**

ORGANIC GARDENING
Dept. 5-G, Emmaus, Pa.

## WAGNER'S QUALITY UNSURPASSED

"LIFE-RAY" BRAND

**Organically Grown Shelled Sunflower Seed Products**

•

**SUNFLOWER KERNELS**

Giant Size, Selected, Sweet and Tender
Postpaid: 1 lb. $1.65, 3 lbs. $4.35; 5 lbs. $6.25

**SUNFLOWER KERNEL MEAL**

Ground fresh daily . . . excellent in all baked goods, cereals, soups, etc.
Postpaid: 1 lb. $1.30, 3 lbs. $3.45, 5 lbs. $5.00

**SUNFLOWER KERNEL OIL**

Cold-Pressed, Unrefined . . . excellent for salads, baking, frying, cooking, etc.
Postpaid: 1 pint $1.00

**SESAME SEEDS**

Choice, imported, unprocessed, white in color. Excellent in all baked goods, cereals, salads.
Postpaid: 1 lb. $1.25, 3 lbs. $3.60, 5 lbs. $6.00

*Prompt delivery upon receipt of check or money order*

**WAGNER INDUSTRIES**
DEPT. D
919 DIVERSEY PKWY., CHICAGO 14, ILL.

## GRIND YOUR OWN WHOLE GRAIN FLOUR

**and you will know that it contains no agene or other preservative or chemical. The flavor alone will tell you how much better it is. A postcard will bring full particulars.**

LEE ENGINEERING COMPANY
Milwaukee 3, Wisconsin

## QUALITY FRENCH PRUNES

Health food—unprocessed—tree run sizes—no chemicals or commercial fertilizers—full of sugar—distinctive flavor—larger and better—**30c** per pound in minimum ten pound lots or more—charges *prepaid* anywhere in U. S. A.—no C.O.D.'s.

**A. C. MARSH**
926 Shannon Road Los Gatos, Calif.

## SUNFLOWER SEED

**Jumbo Shelled Sunflower Seeds**
rich in Vitamin A. B. D.—Ready for the Vitamin hungry

**American Public**
2 Lbs.; $2.50 4 Lbs.; $4.75
***The* GREAT VALLEY MILLS**
R.F.D. 7, Ivyland, Bucks County, Penna.

## SUNFLOWER SEED

ORGANICALLY GROWN

| | | |
|---|---|---|
| **Large screened** | **10 pounds** | **$4.50** |
| **Medium screened** | **10 pounds** | **$3.50** |

(Prepaid)

**C. J. DEBBINK**
Route 2, Oconomowoc, Wis.

## SUNFLOWER SEED SALE

**1 lb. $1.00 postp'd.**
**3 lb. $3.00 postp'd.**
**An introductory special to acquaint you with our health foods and organic gardener aids. Free List.**

**BIO-BRANDS** DEPT. GG-50 JERSEY CITY 3, N. J.

### BUSINESS OPPORTUNITIES

**For Information about MELBOURNE VILLAGE,** a planned community of productive homes and creative living with special emphasis on Organic Gardening, write **AMERICAN HOME FOUNDATION, Box 696, Melbourne, Fla.**

**RAISE BULBS FOR PROFIT.** Tremendous demand. Marketing services. Write **MISSION HILL GARDENS, Box 224, Ashtabula, Ohio.**

**FREE BOOK** "505 Odd, Successful Businesses." $250 Week reported! Work home. Expect something Odd! **PACIFIC, Oceanside, Calif.**

**DISTRIBUTE SUBSCRIPTION-GETTING BOOKLETS.** Help spread the organic message. Nothing to sell. Merely hand out these booklets to likely subscriber prospects of **Organic Gardening Magazine.** Coded coupon permits us to trace source of subscription to your efforts. Liberal commission. **See page 60 for complete story.**

### REAL ESTATE FOR SALE

**NEAR LIGONIER, PA.** Modern Home four miles from Ligonier, Pa. For Sale Five rooms and bath, living room knotty pine, large stone fireplace, screened in porch, oil furnace, electricity, deep water well with electric pump. 7½ acres of land partly with nice old trees, spring, lots of fine large pines around house. Fine orchard, your trees, etc. Organic Gardening bought two tons of Rock Phosphate in 1949. Large Compost full of Earthworms. For information write **P. O. BOX 143, Ligonier, Pa.** or call **Ligonier, 589.**

### WARM WOOLENS

**MOTHERS** of new babies, brides, grooms, graduates welcome AVOCA Handwoven Irish Woolens: warm washable beautiful blanket 40x60, $8.00 postpaid; length of tweed; 95x100 summer-blanket-bedspread; **made-to-measure tweed clothes. CAROL BROWN, Putney 28, Vt.**

**KILTS** for men, women, children; made in Scotland; authentic clan tartans; superior all wool material. Allow eight weeks. Prices reasonable, from importer, **CAROL BROWN, Dept. K, Putney, Vt.** Give tartan, waist, hip, length.

### MONEY MAKING ACTIVITIES

**FREE BOOK** "505 Odd, Successful Businesses." $250 Week reported! Work home. Expect something Odd! **PACIFIC, Oceanside, Calif.**

### MISCELLANEOUS

**IT'S NO SECRET!!!** America's finest families are sending their silver to us for repair and silverplating service. Free estimate and literature. **DETROIT SILVERSMITH COMPANY, 19944 Livernois, Detroit 21, Michigan.**

**CLOGGED and OVERFLOWING CESSPOOLS** and Septic Tanks are a health menace. No need to employ expensive pumping methods. Simply apply 100 lb. drum of SUR-SOLVENT to reduce the solid content and clean the pores in the ground surrounding the cesspool, thereby allowing the proper leaching of the water. Write for descriptive literature and how to start fermentation in your cesspool or septic tank. **ELECTRIC SEWER CLEANING COMPANY, 294 Lincoln St., Allston 34, Mass.**

**HIGHEST CASH PRICES** paid for broken jewelry, spectacles, dental gold, diamonds, watches, etc. Cash sent promptly. Mail articles today or write for FREE shipping container. **LOWE'S, Dept. OR, Holland Building, St. Louis 1, Mo.**

### VACATIONING

**MAKE YOUR next Summer's VACATION** inexpensive. Exchange your house or apartment with another reliable family. Plan now to see another part of the country. For information write to **HILDRETH FINN, 103 Summer St., Springfield, Vermont.**

### HELP WANTED

**HILAND HEALTH HAVEN, 921 Swope Avenue, Route Two, Colorado Springs, Colorado**—teaching and demonstrating organic principles of growing, preparing, combining and colorful serving of nutritious food, needs M.D. (resident) to direct entire activities of exclusive, expensive, sanatorium for healthy students of creative living.

**WANTED:** MAN with background in Health Matters to aid in editing a Health Magazine soon to be published in Allentown, Pa. Would have to move to Allentown. Write **BOX HM, ORGANIC GARDENING, 46 S. West St., Allentown, Pa.**

### POSITION WANTED

**ORGANIC GARDENER,** Fruitarian, 49, Single, Handy Man, Graduate Agriculturist, wants Work. Health-minded Employer or Partner, Tropics. Has New, Patented Shade-Frost-protection Mats. **HANS HEUER, P. O. B. 372, Melbourne, Florida.**

**SALESMAN:** Interested in organic career. Wish to contact large scale operations in any phase of this vital field. **M. ZAFFRON, 436 So. 40th St., Philadelphia, 4, Penna.**

**HOUSEKEEPER,** 40 Wishes position on Organic Farm in New England. Good cook, wide experience. $125.00 month. Write **BOX 7, 8781—193rd St., Hollis, L. I., N. Y.**

### ORGANICALLY ACCEPTED

**UNPROCESSED,** unsulphured, unsprayed, unchemicalized dried Fancy Calimyrna Figs $3.60, Large Mission Figs $2.60, Four Assortment $3.30 (10 lbs.). Natural Dates $1.75, Large Shelled Almonds $3.75, Raw Cashews $3.95 (5 lbs.). Unheated Virgin Olive Oil, 1 gallon $4.50. Please remit. Expressage collected. **S. H. JAFFE (C), Lakeside, California.**

**Delicious DESERT HONEY** from non-spray area, with steam sub-irrigation leaflets. Five pounds, $1.50. Postage prepaid. **G. C. CHRISTENSON, Box 266, Marathon, Texas.**

**HONEY—SUPERLATIVE,** our "repeat customers" say so. 100% Organic Primeval Flower Honey, Sprayfree Clover and Buckwheat Honey: 3 lbs. $1.25; 3 above flavors $3.25; 6 lb. tin $2.10; 12 lb. tin $4.00. Orange Honey: 3 lbs. $1.50 (with above assortment $1.25); 6 lbs. $2.50; 12 lbs. $4.50. Tupelo (Diabetic pack) 3 lbs. $1.75; 6 lbs. $3.00; 12 lbs. $5.50. HONI-BUTTA (our trademark) No chemicals used, spreads like butter, keeps forever. Clover, Buckwheat, Orange flavors: 1 lb. 60c; 3 lbs. assorted $1.50; 5 lbs. any flavor $2.00. We prepay 300 miles against check and bill excess postage. C.O.D. orders filled but postage added. **SMITHTOWN BEE FARM, Smithtown, N. Y.**

**"SALTMARSH'S APPLE SYRUP"** Contains only juice of unsprayed apples and sugar, boiled down to a rich golden syrup of unsurpassed apple flavor. Preferred by hundreds to Maple Syrup. $3.50 gallon—$1.25 quart Prepaid. **SALTMARSH'S CIDER MILL, New Boston, N. H.**

**TROPI-PAYA TABLETS**—Aid to Digestion—Derived entirely from fresh Papaya. No binders, no fillers. Month's supply $1.65 Postpaid. State distributors wanted. **MacDONALD SALES COMPANY, 1500 E. Colorado, Glendale 5, Calif.**

**If you wish to buy or sell organically-grown foods send advertising copy to Organic Gardening, 46 S. West Street, Allentown, Pa. The purpose of the Trading Post is to bring together the buyer and seller of organically-grown food products. Rates are 2¢ a word. Minimum 25 words, or $5.25. Payable in advance. Include name and address in word count.**

### ORGANIC TRADING POST

**Organically grown California LEMONS** One dozen $1.10 Postpaid. Two dozen $2.00 Postpaid. Write for box prices. **ALBERT E. LESLE, 14545 East Whittier Blvd., Whittier, Calif.**

**ORGANICALLY GROWN WHEAT** processed into 100% whole wheat and cereal containing all the original vitamins and mineral salts of the wheat berry. Trial 5 lb. bags of flour or cereal sent postpaid for $1.00. **LOU-HELEN RANCH, Davison, Mich.**

**PREMIUM QUALITY VALENCIA ORANGES.** Nutritionally Certified. No Chemicals, poisons. In California No. 1 size (16-17 lb.) $2.35; No. 2 size (32-34 lb.) $4.25 prepaid. Folder, prices available other states. **DR. A. P. KOENTOPP, 1010 North Broadway, Santa Ana, Calif.**

**BIO-DYNAMIC** (organic grown) **Whole Wheat FLOUR** and CEREAL Stoneground, 5 lbs. $1.—plus postage. In order to serve you better we have established distributors, in Chicago **George Waylett, 416 No. State, Chicago, Ill.** On the West coast **Sargant's Health Foods, Missies near Sixth, Carmel, Calif. WALTER BUSCHMAN, Juniper Farm, R. D. 1, Chester, N. Y.**

**Organic IRISH POTATOES.** Half bushel $4.00, bushel $7.50, f.o.b. North Dakota. ORGANIC SEEDS: Potato, Corn, Grains, Milo Maize, Sesame, Sunflower, Vegetables. Price on request. FREE CATALOGUE. **NATURAL ORGANIC FOODS, Box 222, Big Pines, Calif.**

**FOURTH YEAR** for Walnut Acres home-grown, home-processed, organically raised foodstuffs. Fresh, stone-ground wheat, rye, corn, buckwheat flours, cereals. **PAUL KEENE, Penns Creek, Penna.**

# The Trend is The Organic Way

## These ORGANIC GARDENING Books and Booklets Show You the *Why* and *How!*

### *Vital Publications for Organic Gardeners*

**AN AGRICULTURAL TESTAMENT**
*by Sir Albert Howard, C.I.E.*

The standard textbook for all who want to change over to home-made organic fertilizers. 253 pp. **$3.50.**

•

**THE SOIL AND HEALTH**
*by Sir Albert Howard, C.I.E.*

Food problems can be solved only by restoring to the soil its virginal fertility. Most farmers are soil bandits. A remarkable follow-up to "An Agricultural Testament". 320 pp. **$4.00.**

•

**MAKE FRIENDS with Your Land**
*by Leonard Wickenden*

A knock-out blow to chemical fertilizers. Illustrated, 144 pp. **$2.50.**

•

**NUTRITION AND THE SOIL**
*by Dr. Lionel Picton*

Scientific evidence that nourishing food comes only from crops and animals raised organically. 400 pp. **$4.00.**

•

**BIO-DYNAMIC Farming & Gardening**
*by Dr. Ehrenfried Pfeiffer*

Describes in detail how to convert an ordinary farm into a bio-dynamic farm. Paper, 240 pp., 18 illus. **$1.75.**

•

**PAY DIRT** *by J. I. Rodale*

*The best guide to the organic movement.* Points the way to proper gardening methods. 252 pp. **$3.00.**

•

**THE COMPOST GARDENER**
*by F. C. King*

An English gardener explains his system of organic gardening. Foreword by Sir Albert Howard. Paper, 100 pp. **$1.00.**

•

**EARTHWORMS—Their Intensive Propagation**
*by Dr. Thomas J. Barrett*

Complete, practical working directions for breeding, feeding, growing, and harvesting. Paper, 60 pp. **$1.00.**

### THE ORGANIC GARDENING LIBRARY

*Popular paper-covered, pocket-size booklets*

1. **THE DOCTORS' ATTITUDE TOWARD FERTILIZERS.** What they think of the organic method. Contains transcript from U. S. Senate Hearing. 60c
2. **MANUAL OF ORGANIC MATERIALS. A Comprehensive List of Compostable Materials Occurring in the Home and in Industry.** This book alphabetically lists 85 substances that may be used to keep the soil fertile in Nature's way. It defines the composition of each material and what each substance contributes in plant nutrients to the soil. . 50c
3. **BULBS AND HOUSE PLANTS** by Cecile Matschat. Discusses tulips, iris, lilies, peonies, etc. 60c
4. **ANNUALS AND PERENNIALS** by Cecile Hulse Matschat. Describes the advantages of annuals over perennials and vice-versa. . . 60c
5. **HOUSE AND GREENHOUSE GARDENING** by Fred McCready. Deals with inexpensive means for growing plants in your house and under glass in hot-beds and greenhouses. . . $1.00
6. **GARDENING WITH THE EXPERTS.** An encyclopedia on all phases of gardening. . $1.00
7. **THE WAR IN THE SOIL** by Sir Albert Howard, C.I.E., M.A. A magnificent summary of the organic cause for those who desire to change from ordinary to home-made organic fertilizer. . . 50c
8. **SEEDLINGS** by Evelyn Speiden. How to start seedlings—how to prepare the garden. . $1.00
9. **VEST-POCKET VEGETABLE GUIDE** by Roger W. Smith. How to grow 40 vegetables in the organic manner—for medium northern climate. 25c
10. **COMPLETE MODERN GARDEN HERBAL** by Robert O. Barlow. Many facts about herb gardening and usage in several lands. . . . $1.00
11. **THE FRUIT ORCHARD** edited by J. I. Rodale. Practical hints, unusual data on fruit growing. 50c
12. **LEAVES AND WHAT THEY DO** by Heinrich Meyer. For every gardener and lover of plants. 45c
13. **SUNFLOWER SEED—THE MIRACLE FOOD** by J. I. Rodale. Treatise on how to grow, how to eat this vitamin-rich food. . . . 50c
14. **WEEDS AND WHAT THEY TELL** by Ehrenfried Pfeiffer. Discusses hundreds of weeds common to farm, orchard and garden. . . $1.00
15. **SHRUBS AND TREES** by Cecile Matschat. Landscape design, borders and backgrounds, street trees, flowering trees, fruit trees, evergreens, etc. 60c
16. **HOW TO MAKE A GARDEN** by Cecile Hulse Matschat. Here are all the facts and underlying principles to make any garden a success. Illustrated. 65c
17. **PLANNING THE HOME GROUNDS** by Cecile Matschat. Whether you buy or build . . . remodel or start from the ground up, this book will help you develop a beautiful setting for your home. . 65c
18. **HOUSE PLANTS—How To Grow Them** by P. T. Barnes. A complete guide for growing healthy vigorous plants in the house. . . 50c
19. **TEN TRUSTWORTHY TROPICAL TREES** by John C. Gifford. A delightful book. Includes the lime, coconut, guava, avocado and mango. . $1.00
20. **WILD GARDENS OF NEW ENGLAND** by Walter Prichard Eaton. How to reproduce natural settings of wild flowers in your garden. . . $1.00
21. **GARDENING FOR PROFIT** by Peter Henderson. Originally published in 1874. Reveals many profitable secrets for present-day gardeners. . $1.00
22. **QUICK-RETURN METHOD OF COMPOST-MAKING** by M. E. Bruce. New ideas for producing compost WITH OR WITHOUT manure. $1.00
23. **TREE CROPS** by J. Russell Smith. An inspiring book on trees yielding crops as animal food. 75c
24. **EDIBLE PLANTS OF THE POND AND WATER GARDEN** by G. L. Wittrock. A wonderful instructor for the nature-lover and fisherman. . 50c
25. **THE FORMATION OF VEGETABLE MOLD THROUGH THE ACTION OF WORMS** by Charles Darwin. The most important parts of his classic on the earthworm, with other articles. . 60c
26. **OUR FRIEND THE EARTHWORM** by George S. Oliver. Deals with the importance of the earthworm to gardening. . . . . $1.00
27. **ANIMALS AND THE GARDENER** by Richard Headstrom. Animals and insects that are friends and foes to the garden. . . . 35c
28. **LUTHER BURBANK** by Roger W. Smith. Plant breeding and the important contributions of this great horticultural pioneer. . . 35c
29. **QUESTIONS AND ANSWERS ON COMPOST** edited by J. I. Rodale and Heinrich Meyer. A guide for compost-making. . . 35c
30. **COMPOST—HOW TO MAKE IT** edited by J. I. Rodale. The only book of its kind. . 35c
31. **SLEEP AND RHEUMATISM** by J. I. Rodale. Simple rules for avoiding stubborn conditions of neuritis caused by pressures exerted during sleep. 35c
32. **NATURAL BREAD** edited by J. I. Rodale. Discusses health-giving values of breads and cereals made with organically-grown stone-ground grains. 35c
33. **DEBATES IN HOUSE OF LORDS.** Deals with the advisability of forming a Royal Commission to check on the Howard method of farming. . 45c
35. **FLOWERS FOR EVERYONE** by Heinrich Meyer. Facts about common plants of the garden. 40c
36. **THE GARDEN NOTEBOOK** by Alfred Putz and J. W. Johnson. Proper methods and practices for all types of gardening. . . $1.25
37. **THE GLADIOLUS BOOK** by William M. Jokl. All about the gladiolus and its culture. . $1.00
38. **THE BERRY BOOK** by M. B. Cummings, Ph.D. If you grow, or intend to grow, berries, this book is worthy of your attention. . . 80c
39. **FLOWER CALENDAR** by Dr. W. H. Eyster. Tells what to plant and when to do it. Assures a blooming, beautiful garden all year round. . $1.00
40. **THE VEGETABLE CALENDAR** by Dr. W. H. Eyster. Climate maps and extensive tables; month-by-month chart of sowing and harvesting. $1.00
41. **THE ORGANIC METHOD ON THE FARM** by J. I. Rodale. Large-scale composting; odorless, laborless chicken-house; field crops and orchards. $1.00

**BINDERS** for Organic Gardening Library Booklets. Each holds 12 books. Copies easily removed. $1.25

•

### SPECIAL OFFERS

**A FREE binder with every order for $10 worth of Organic Gardening Library Booklets.**

***The entire series of 40 books, mounted in 3 binders, value $31.80: ONLY $25!***

**Postage prepaid on domestic cash orders. Canada and Foreign add 10% for shipping charges.**

Send your order direct to ORGANIC GARDENING, Emmaus, Pennsylvania

# Build a Library of Gardening Books via the Organic Gardening 20% DISCOUNT PLAN

## *Here's how you benefit:*

When you order the *Organic Gardening* Book of the Month, *plus at least one additional book* listed at the right, *you get a* 20% DISCOUNT *on your entire order.* This is your opportunity to build a helpful Organicultural library at unusually low cost. *Note*: Discount Plan orders for the May Book of the Month will be accepted only during May and June 1950. No C.O.D.'s on this special offer, which is open only to *Organic Gardening* subscribers.

## *The Book of the Month for May is*

# Memoirs of a Rose Man

**by Dr. J. Horace McFarland**

In these intimate "Tales from Breeze Hill," the late Dr. McFarland recounts the circumstances which early in his life interested him so vitally in plants. Dr. McFarland regarded the rose as the universal flower, and no one can read the chapters on climbing roses without learning many of the secrets of growing them successfully. His book is the expression of a great personality. "Holds the unfailing interest of the reader."—*The Flower Grower.* Dedication by Liberty Hyde Bailey; introduction by R. C. Allen, Executive Secretary of the American Rose Society. 160 pages, handsomely designed, 20 photographs. **$3.00.**

### *Example of the Discount Plan:*

If you purchase "Memoirs of a Rose Man" and "Farmers of 40 Centuries," you take the 20% discount on $8.00 and send only $6.40—a saving of $1.60! *The more books you buy when you buy the book of the month, the greater your cash saving.* And at the same time you are adding helpful, fascinating, authoritative books to your library, all written or endorsed by J. I. Rodale, editor of *Organic Gardening.*

Start NOW!

**MAIL YOUR ORDER TO**

**BOOK OF THE MONTH DEPT.**

## Organic Gardening

**EMMAUS, PENNSYLVANIA**

## Any of these ORGANIC GARDENING books may be used to complete your DISCOUNT PLAN:

### THE HEALTHY HUNZAS

*by J. I. Rodale*

True story of a cancer-free people who return all residues to the soil. Gives full details. 263 pp., 20 photos. **$3.00.**

•

### THE PRUNING BOOK

*by Gustave L. Wittrock*

Deals with all kinds of shrubs and trees, tells not only *how* to prune, but *when*. 166 pp., diagrams, photos. **$3.00.**

•

### THE EARTH'S GREEN CARPET

*by Louise E. Howard*

The increase of degenerative diseases is a result of soil depletion by artificial fertilizers. Only a living soil is productive. 260 pp. **$3.00.**

•

### STONE MULCHING IN THE GARDEN

*by J. I. Rodale*

Eliminate cultivating and weeding and obtain better yields. A gardening innovation! 164 pp., 50 photos. **$3.00.**

•

### FARMERS OF FORTY CENTURIES

*by F. H. King*

How compost farming and gardening have enabled the crowded Orient to feed itself and keep its lands fertile—a lesson for us all. 384 pp., 209 photos. **$5.00.**

•

### THE EARTH'S FACE & Human Destiny

*by Dr. Ehrenfried Pfeiffer*

A beautiful landscape is an index of a *living* soil. The author warns against agricultural practices which destroy the soil. 183 pp., 60 illus. **$2.75.**

•

### TREES AND TOADSTOOLS

*by M. C. Rayner, D. Sc.*

Deals with their fundamental but little understood relationship. 122 pp., 18 full-page photographs. **$2.50.**

•

### HUMUS AND THE FARMER

*by Friend Sykes*

How 750 "worthless" acres were changed into rich farmland. 416 pp., 40 photos. **$4.50.**

O 12 50 IYR 512851 FRP
LIBRARY
PURDUE UNIVERSITY
LAFAYETTE IND